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WAGES IN THE UNITED STATES
1908-1910



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WAGES IN THE UNITED STATES 1908-1910

A STUDY OF STATE AND FEDERAL
WAGE STATISTICS

BY

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New York

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PREFACE

SINCE Professor R. C. Chapin estimated that a New York family consisting of a man, wife and three children under fourteen could maintain "a normal standard, at least so far as the physical man is concerned," on an annual income of \$900, speculation has been rife as to the number of families whose incomes equalled that sum. Controversy was futile. No recent wage study had been made, and aside from the reports of the State bureaus of labor, which were popularly supposed to contain little or no data of importance, no available wage figures existed.

But some relation must be established between the \$900 efficiency standard and the wages actually paid in American industry, else the Chapin Study would lose much of its force. The publication of a Federal Report on Wages in the Bethlehem Steel Works gave the needed impetus and we plunged into the work. This "we" is used advisedly,—not editorially, since Nellie Marguerite Seeds Nearing did a large amount of statistical compilation; Professor Robert E. Chaddock proved an excellent adviser

PREFACE

on statistical method; and Miss Alice E. Roché ably directed the stenographic work. While, therefore, the present study is published under one name, it is, in reality, the product of several persons, all of whom played a part in the production of the work. I therefore take this occasion to thank them, and to say that they deserve a large measure of any credit that may attach to this product of our coöperative effort.

Unfortunately, this cannot prove a companion study to the Chapin Investigation. The New York Bureau of Labor publishes the wages of union members only, and even this incomplete data is not in a form available for such a comparison. Nevertheless, the evidence here adduced is of a nature to warrant the conclusion that a large portion of American workmen are unable to maintain an efficiency standard of living, and to justify such early steps as will result in the presentation of more complete wage statistics. While the conclusions here set down are by no means final, they are based upon such statistical proof that they must stand until overthrown by additional studies.

SCOTT NEARING.

UNIVERSITY OF PENNSYLVANIA,
March 30, 1911.

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1908-1910

WAGES IN THE UNITED STATES

CHAPTER I

THE WAGES PROBLEM

I. "WHAT ARE WAGES?"

IT is almost impossible to delve into any modern social problem without being confronted by the question, "What are wages?" Here is a man with a wife and four children, living in an insanitary, tumble-down tenement. The woman has rheumatism; the children croup and rickets. Obviously, the family ought to move to a better dwelling. The rent is overdue, however, and if they move, the landlord will levy on the furniture; the grocer's and butcher's bills are large and cannot be met; moreover, to move means either to go into an equally cheap, bad house somewhere else, or to pay more rent. How can this family pay more rent than the present

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\$2.25 per week? The father earns \$9 as a laborer in a lead works. Of late years he has been ailing, —lead poisoning, they say, and with the doctor and medicine bills, the balance, after paying the present rent, is scarcely large enough to buy food. Then, too, work is not steady. During some weeks, the lead works is closed two or three days, and instead of making \$9 the man earns \$6 and sometimes \$4.50. But the rent stays at \$2.25.

If the man had always earned higher wages, he would never have been reduced to living in such a vile hovel. In fact, when he was first married, he lived in a respectable little cottage, for which he paid \$15 a month. But the children came, and by the time there were four of them it seemed necessary to move in order to cut expenses. So the family came here. Even now a rise in wages would enable them to live better, but that rise does not come.

The children, too, feel the burden of low wages and bad quarters. The oldest boy (thirteen) sells papers. He has already learned to beg; and the other day, after making a raid on a freight car loaded with bananas, he found himself, with two of his companions, securely lodged in the station-house. He is no worse than the average boy, but

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he was hungry—in fact, since the last two children came and the family began its dry bread and coffee diet, his stomach has been constantly quoting *Oliver Twist's* famous saying: "Please, sir, I want some more."

The two girls, ten and eight, are ill-dressed and ragged. They do not make a good appearance at school (their brother ceased to attend last year for that reason). They feel uncomfortable,—so uncomfortable that they are not benefiting particularly by the geography and mental arithmetic which are administered daily in liberal quantities. The whole family has been living an indecently crowded life,—eating, washing, dressing and sleeping in three small rooms, therefore these girls are "wise." Their learning, not of the books, is amazing in extent and is readily available. Upon meeting other women, eight and ten years of age, they constantly employ this learning in appalling conversations.

A higher wage would provide this family with food, clothing, a good house of decent size, medicines, attendance; for the mother is a good manager, and the father a hard-working and sober, though a sick man. The children would attend school decently clad, and would lead decent lives

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at home. The question therefore very naturally arises,—“How many men in the United States are receiving wages which force them and their families to live under such abnormally bad conditions?”

A glance at another phase of the problem leads to the same question. A recent New York investigation concludes with the statement that a man, wife and three children under fourteen cannot live and maintain efficiency on Manhattan Island for less than nine hundred dollars per year.¹ While no similar studies have been made in other cities, superficial investigations show that this figure is not excessive for Boston, Buffalo and Chicago; that it is low for Pittsburg, and probably a little high for Philadelphia and Baltimore. In other words, it is a fair average for the great cities east of the Mississippi and north of Virginia.

A student peruses this investigation and gleefully presents its conclusion to his “practical” friend. The practical friend is immediately convinced. “That sounds well enough,” says he,

¹ “Standard of Living among Workingmen’s Families in New York City.” Robert C. Chapin. New York Charities Pub. Com., 1909, pp. 245-6.

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“but I don’t suppose there are many families of five that are forced to live on so low a wage.” The student ponders for a moment, and then replies, “Well, I really can’t say. There is no study which shows what wages really are.”

And so for a dozen pages, problem after problem might be stated, which, in the last analysis, depends for its solution upon an answer to that question,—“What are wages?”

II. THE NECESSITY FOR WAGE STATISTICS

Thus, an attempt to answer the question—“What are wages?”, has led to this collection of material on “Wages in the United States.” There are at least three directions in which such a study, if carefully made, would be of supreme importance,—first, in the discussion of wage theories; second, in the discussion of the cost of living; and, finally, in the problems arising out of the standard of living investigations. The constant demand for the facts in any one of these fields would justify their presentation in this work; the aggregate necessity of the three problems makes the presentation of the statistics of wages ultimately imperative.

The development of the “wage system” has

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forced wages into the foreground of theoretical discussion. At least two-thirds of those gainfully employed in the United States are employed for wages; so that the population of the United States may well be described as a "wage-earning" group. A small percentage of the population is dependent upon income from securities and investments (mortgages, bonds, land, and the like); another small percentage, though a decreasing one, is dependent upon profits from private business; there is a small class of persons employed for stated annual salaries; somewhat less than one-third of those gainfully employed are deriving an income direct from agriculture, leaving approximately two-thirds of the gainfully employed population earning incomes in the form of daily, weekly or monthly wages. Hence, wages are the means chiefly relied upon, as a return for industrial effort (work), to provide the necessities of life to the population of the United States.

From the standpoint of the economic theorist, wages are one share, and a troublous share, in the distribution of the values produced through industry. Together with rent, profits and interest, they constitute the elements in distribution. The economic literature which deals with wage theory

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is most voluminous and inconclusive. Could an accurate measure be had of the facts, a more satisfactory body of wage theory might well be created. While this chapter merely aims to indicate the possible uses of wage statistics, it is impossible to pass by the question of wage theory without insisting upon the necessity of reaching some measure of agreement regarding the underlying causes which are operating to maintain or to change wages. A statement of wage facts may, perhaps, assist somewhat in hastening that agreement.

Important as wage facts are, from a theoretical standpoint, they have an even more vital application to the "cost of living" and "standard of living" problems. The heated discussions which have recently appeared in theoretical treatises, popular magazines and daily papers over the relation of wages and the cost of living indicate the universal interest which is felt in the problem. The facts regarding the cost of living can be gathered with a reasonable degree of accuracy by an examination of Bradstreet's Review of Wholesale Prices. The facts regarding wages are well-nigh inaccessible. Hence, statements of the relation between wages and the cost of living are faulty

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in that the wage statistics employed are incomplete. The cost of living discussions would be of far greater value could they promise some general wage facts.

The same statement holds true in the discussions of the "standard of living," a sum of economic goods large enough to permit a family to maintain its physical efficiency. At the very outset the necessity arises of establishing some relation between the wage received and such an amount of economic goods as will maintain efficiency. In this endeavor, success obviously depends upon the ability to place side by side a statement of the amount of goods necessary to maintain efficiency and of the amount of wages which families receive. A number of recent studies have shown, pretty clearly, what amount of economic goods is necessary to maintain a standard of efficiency. It remains, however, to ascertain what portion of the wage earners in the community receive wages sufficient to maintain such a standard.

Whether, therefore, the discussion is of the relation between wages and the cost of living, or between wages and a standard of living, the question must finally be answered: "What are

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wages?", for neither discussion can proceed satisfactorily without some reply to that fundamental proposition.

III. THE AVAILABLE WAGE DATA

For years I have been constantly baffled in my investigation of these, as well as other social and economic problems, by the lack of knowledge on this subject. At every turn, the need arose for an accurate, concise statement of the wages being paid in the various parts of the United States, yet to date no study has been made which supplies the need. Ryan's Estimate¹ is old, and at best incomplete; Mrs. More's statement,² like the statement in the 1903 Report of the Commissioner of Labor,³ is of standards of living primarily, and only incidentally of wages. In neither case is the ground covered sufficiently to warrant valuable wage deductions. The Wage Study accompanying the Census of 1900⁴ is old, and rather inadequate, as the compilers themselves

¹ "Living Wage." J. A. Ryan. New York, Macmillan Co., 1906.

² "Wage Earners' Budgets." L. B. More. New York, Holt, 1907.

³ Annual Report U. S. Commissioner of Labor, 1903. Washington, 1904.

⁴ Census of 1900. Special volume on Employees and Wages. Washington, 1903.

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point out. Not only is there a lack of material in the past, but, so far as could be learned, there is little disposition to collect wage statistics in the immediate future. Upon inquiry I learned that the United States Bureau of Labor had published no material on wages since 1907, and had none in immediate contemplation, while the Director of the Census, in reply to a letter,¹ stated that no special wage study would be made in connection with the Census of 1910. Hence, a successful study of the cost of living, the standard of living, or of any other social problem in which wages are directly involved, must be preceded by some unofficial study of wages.

It is the aim of this study to set down, as perfectly and as briefly as may be, an answer to the question, "What wages are now being paid in the United States?" Should the answer be measurably accurate, a basis, at present non-existent, will be provided for advanced studies. The field is a virgin one, and like all pioneers in a virgin field, this study will doubtless prove in many respects inadequate and incomplete, yet, could it mark the beginning of a series of investigations which will ultimately furnish a complete

¹ Dated Oct. 18, 1910.

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answer to the question "What are wages?", it would be more than successful,—it would be progressive.

The available data on the subject of wages exists chiefly in the reports of State bureaus of labor, and is unfortunately of such a nature as to render comparison with data of a decade since (in the few cases where such data exists) most unsatisfactory. In consequence of this inadequacy, the present study has been confined to current wages, a step rendered even more imperative by the fact that many of the labor bureaus from which data was secured have been in existence for only one, two or three years.

Owing to the slowness of some States in publishing reports, the data is, unfortunately, not all relative to the same year: "a study of wages in the United States for 1910" would have been far more satisfying than this study for 1908-1910. The years are, however, comparable to a degree, as the worst phases of the depression following the panic of 1907 had disappeared in 1908, and industry, while not normal, was returning slowly to normality. Wherever possible the data for 1909 has been used in preference to that

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for any other year, and the greater part of the material relates to that year.

The aim of the study will therefore be, through the comparison of available data, to show existing wages,—

1. In certain States publishing the best wage statistics.

2. In three industries of which special wage investigations have recently been made.

3. As shown in “average wages.”

4. As distributed geographically.

5. As distributed through special industries.

A measurable degree of success in this endeavor will furnish material which will establish a foundation on which more advanced and more important studies may be erected.

CHAPTER II

STATE WAGE STATISTICS

I. THE SCOPE OF STATE WAGE STATISTICS

The data of most value, in a wage study, would normally be secured from the States in which the largest amounts of wages are paid. These States, described by the Census of Manufactures in terms of "capital invested," "number of wage earners employed," "value of product," etc., may, for convenience of discussion, be designated as "great industrial States." In the order of their industrial importance, the first ten of these States are:

- | | |
|------------------|--------------------------|
| 1. New York | 6. New Jersey |
| 2. Pennsylvania | 7. Missouri |
| 3. Illinois | 8. Michigan |
| 4. Massachusetts | 9. Wisconsin |
| 5. Ohio | 10. Indiana ¹ |

Though these States represent the industries of the United States paying the most wages and

¹ Census of Manufactures, 1905, Vol. I, pp. cxcviii-cxcix.

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employing the largest number of wage workers, they fail, for the most part, to publish any worthy wage statistics. A few citations will establish the truth of this assertion. New York wage statistics relate to members of labor unions only; the average wage statistics of Pennsylvania are incomplete,—even those cited are wretchedly compiled and presented; Illinois has published no recent statement of wages except in department stores; the latest available Wisconsin report includes the years 1906–7; Missouri, Michigan and Indiana publish little or no wage data. Thus, of the ten leading industrial States, but three,—Ohio, Massachusetts and New Jersey,—furnish wage data which merits a somewhat extended comment. The statistics for Ohio are excellent, but very diffuse and unconcentrated. The statistics for Massachusetts and New Jersey are, on the other hand, scientifically classified, accurately presented, and in every sense satisfactory and reliable. Therefore, of the ten leading industrial States, three present worthy wage data; the statistics of two are far from satisfactory; while five of the ten States furnish no current wage material of value to this study.

Deplorable as is the lack of statistics in these

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great industrial States, the conditions in the country at large are infinitely worse. Of the forty-seven States of the Union, not more than five publish good up-to-date wage statistics. These five are Massachusetts, New Jersey, Kansas, Oklahoma and Ohio. Of the remaining States, a score publish statistics of average wages only, which, in some cases, are so unrepresentative as to be valueless.

The really valuable State data,—and it is strictly limited to the reports of a few States,—will appear in the present study, which will include all of the scientific wage material furnished in the State reports up to January 1, 1911. The New York material is not used because, collected from trade unions only, and giving, therefore, union rather than general wages, it is not comparable with the material published in any other wage report, and not representative of general labor conditions.

This brief statement will convey some idea of the inadequacy of existing State wage statistics. It remains to consider the various methods of compilation employed, since good statistics, badly compiled and presented, are no better than badly collected statistics.

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II. THE METHODS OF STATE WAGE REPORTS

The least desirable form in which States report wages is the "Maximum and Minimum" system. Under this system, the highest and lowest wages paid in any establishment are considered. An example of this method appears on page 18 of the Twenty-third Annual Report of the North Carolina Department of Labor (1909), where it is stated that in Alamance County, in all of the industries, the highest weekly wage paid to men was \$23.67; the lowest wage \$13.47. That is the extent of the statistics. There is no statement of the total number of men employed, and no figures to indicate how many men received \$23.67 and how many received \$13.47. It may well be that the high wages were paid to a few foremen and highly skilled artisans or mechanics, while the lowest was the prevalent wage; however, in the absence of any knowledge of the character of the industry, of the total number of employees, and of the numbers receiving specified wages, the figures are ridiculous,—not worth the paper on which they are printed, since they fail to furnish the least indication of the rate of wages paid in North Carolina. It is unnecessary to say that

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the States which use such methods of compiling wage statistics might reduce their Labor Bureau appropriations by the amount of the printer's bill, without serious loss to the public.

Another most unsatisfactory group of figures is furnished by a number of States of which Michigan is a typical illustration. For the entire State of Michigan there were in 1909, 9,052 industrial establishments, employing

	With Average Daily Wages of
9,194 Superintendents.....	\$5.07
9,213 Foremen.....	3.31
9,862 Male Office Employees.....	3.10
6,619 Female Office Employees.....	1.57
209,967 Male Factory Employees.....	2.56
42,789 Female Factory Employees.....	1.14
2,746 Boys under 16.....	.88
1,407 Girls under 16.....	.77

making a total of 291,799 employees with an average daily wage of \$1.98.¹ These totals are computed from the same figures for each county, but no industries are mentioned, so that, while the figures convey more information than the North Carolina figures, they are still exceedingly defective.

The next group of State reports, typified by Pennsylvania, gives rather detailed average fig-

¹ First Annual Report, Department of Labor, Lansing, Mich., 1910. Pp. 188-189.

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ures for industries, and for the entire State. It is possible, from such statistics, to compare the average wages of adult women in the hosiery and in the worsted goods industries, or the wages of adult men in the anthracite and bituminous coal mines. Such average wage figures begin to have a minimum value for purposes of comparison; still they cannot be used as the basis of important conclusions regarding actual wages.

The best of the reports, like those of Massachusetts and New Jersey, give not only average wages, but a classification of wages which makes possible definite statements regarding the number of employees in each industry receiving a certain wage. The North Carolina type of report will be overlooked in the present study, which will present analyses only of those reports from which scientific deductions are possible. Since the most valuable material appears in the statistics of classified earnings, the next section will be devoted to a discussion of the collection and presentation of classified wage statistics.

III. THE MASSACHUSETTS METHOD

The State most successful in collecting and presenting classified wage statistics is Massachusetts.

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As that State stands among the leaders in this important work, it will not be amiss to describe, in some detail, the methods employed by Massachusetts in collecting and presenting wage material; for could this study succeed in nothing more than in bringing to the attention of State labor bureau chiefs the desirability of collecting and publishing uniform statistics, together with a method for so doing, it would have more than justified its existence.

First, as to the Massachusetts method of collecting the statistics. The Massachusetts Bureau of Statistics has adopted a schedule similar to that employed by the United States Census in its collection of statistics of manufacture. In fact, the two schedules are so similar that the Massachusetts statistics for 1909 and the United States Census of Manufactures for 1909 were collected coöperatively in the same schedule, but the method of collecting the Massachusetts wage statistics is, on the whole, superior to that of the Census of Manufactures, which can supply only average wages.

The year of the Massachusetts Statistics ends December 31st, thus making the calendar year the statistical year. On the blanks which are

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mailed annually to manufacturers there are ten questions. The first and second are for private firms and corporations respectively, the first referring to "partners" and the second to "stockholders"; question three is on "capital invested"; question four on "materials used"; and question five on "goods made,"—all of these questions relate to the manufacturer and to manufacture. As the five remaining questions deal with wage earners and wages, they will be discussed in greater detail.

Question 6. Total wages paid during the year to wage earners only.
 Note.—Do not include salaries.

On the answers to this question are based the statistics of Average Wages.

Question 7. Persons employed (wage earners only).

Number of Persons Employed		Males	Females	Total
During the Month of:				
January
February
March
April
May
June
July
August
September
October
November
December

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Question 8. Wage Earners, number, December 17, 1910, as per pay roll.

	Males	Females
18 years of age and over.....
Under 18 years of age.....

The answers to this question give the number of adult males and females and the number of young persons, males and females, on a specified date.

Question 9. Classified Weekly Wages (wage earners only).

Specified Wages (rates) Paid for the Week during which the Largest Number of Per- sons was Employed	Adults Eighteen Years of Age and Over		Young Persons (under 18 Years of Age)	Totals
	Males	Females		
Under \$3.....
\$3 but under \$5.....
5 " " 6.....
6 " " 7.....
7 " " 8.....
8 " " 9.....
9 " " 10.....
10 " " 12.....
12 " " 15.....
15 " " 20.....
20 " " 25.....
25 and over.....
Totals.....

It is upon the answers to question 9 that the compilation of classified wages is based—by far the most important compilation of the Massa-

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chusetts Bureau. Could the other States adopt no other, they would do well to ask this one question.

Question 10. Days in Operation.

- A. On full time.....
- B. On $\frac{3}{4}$ time.....
- C. On $\frac{1}{2}$ time.....
- D. On less than $\frac{1}{2}$ time.....
- E. Days idle.....

Total..... 305 days.

Number of hours per week normally worked by wage earners:
.....hours.

Answers to question 10 furnish the material on unemployment, which, together with the classified weekly wages, makes possible a fairly accurate compilation of the classified yearly earnings.

The answers to these ten questions must, under the law, be given before "Jan. 21, 1911." When returned, they are compiled in six tables.¹

Table 1, compiled from questions 1 to 6, gives

1. Number of establishments
2. Capital devoted to production
3. Value of stock and materials used
4. Amount of wages paid during the year
5. Average yearly earnings

¹ See The Commonwealth of Mass. Bureau of Statistics, Annual Report on the Statistics of Manufactures, for the year 1908. Boston, 1909.

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6. Wage earners employed
 - a. Average number of—
 - A. Males
 - B. Females
 - C. Both sexes
 - b. Smallest number
 - c. Largest number
7. Value of product

These statistics are compiled—

- A. For the entire State by industries
- B. For the 33 cities by industries
- C. For 108 towns by industries

In the cases of small firms, the total is given for the town only. In all cases, throughout the table, particular attention is paid to giving totals for the State, for each city, town and county, and for each table.

Table 2 is a special table on the Boot and Shoe industry.

Table 3 is also a special table on the Cotton industry.

Table 4 gives the tabulation by industries of answers to question 7, on the number of persons employed during each month.

Table 5 gives, by industries, the classified weekly wages, as stated in the answers to question 9.

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Table 6, in three parts, gives the statistics of unemployment by industries, by cities and towns, and by counties.

All of this tabulated material appears in a little over one hundred—exactly 126 pages—in such form that it can be readily utilized. It permits of an accurate analysis and determination of the condition of manufactures in Massachusetts, the rates of wages and the extent of unemployment. It is, from the commercial standpoint, important, and from the standpoint of the social worker invaluable in the determination of disputed wage problems.

There is one objection which may, with obvious justice, be urged against these statistics. They are furnished by the manufacturers and present only their side of the problem. They may be accurate for capital, product, and the like, but they cannot fairly represent wages. Men and women are frequently sick, injured, kept at home. They do not work the full 275 or 296 days, as stated in these tabulations. The mill may have been in operation, but these people were, for one reason or another, not in their places and consequently were not paid.

That objection is valid. Yet from manufac-

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turers, no more accurate or useful statistics could be secured, unless they furnished an abstract of their pay-rolls, and the records of each individual worker were tabulated. Such a task, for 500,000 workers, would be only less stupendous than a door to door census of the entire State. For the time being, neither of these propositions is practicable. Meanwhile, the Massachusetts system is an excellent substitute for the one which we may hope to adopt in the distant future.

Two other schedules are sent to employers and to trade unions, requesting statements as to changes in wages during the past year. For the purpose of the present study, the compilations of these replies are unimportant.

The Massachusetts method of collecting and presenting wage material has already been adopted by a number of States. Thus far it has met with admirable success, and until some more effective method is devised, it should be accepted as a standard by other State labor departments.

IV. THE NECESSITY FOR UNIFORMITY IN STATE WAGE STATISTICS

The Massachusetts system of collecting wage statistics has been described in detail in order to

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explain the source of the Massachusetts statistics, and in the hope that other labor bureaus may follow the Massachusetts example and thus provide a larger body of accurate wage data. The system, while little more expensive, is infinitely more valuable than the "Maximum and Minimum" and "Average" systems of wage compilation,—adopted by so many of the States.

A solution of many social problems depends upon an accurate answer to the question, "What are wages?" The fact basis for such an answer can be secured in one of two ways. Either the Federal government must organize and administer an enormous system for collecting and compiling industrial statistics, or else the States must utilize the machinery already existing, collect uniform statistics and present them in a uniform manner. The latter alternative is by far the more rational, though it may not in the end prove more feasible. Several States, however, are already presenting wage material which is fairly uniform, having adopted the standard originally set by Massachusetts. Thus the means for securing uniform wage statistics already exists in all States which have labor bureaus. It only remains for the various bureaus to follow the example of Massa-

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chusetts, New Jersey and Kansas, in the collection and tabulation of average and classified wages.

Until some uniform system is widely adopted, any accurate answer to the question, "What wages are paid?", will be impossible. The statistics of a few States may be discussed, with inferences for the remainder of the country, but this method is always unsatisfactory. The crying need is for uniform statistics from so large a group of representative industrial States that an accurate determination of the wages paid,—hence of the probable social status of the workers,—will be possible.

The three following chapters will include a detailed study of the wage statistics in the States furnishing classified wage data. In so far as these statistics are comparable, deductions will be drawn from all of them. In any case, however, the statistics from each State permit of definite conclusions for at least that limited area.

CHAPTER III

WAGE STATISTICS OF MASSACHUSETTS

I. CLASSIFIED WEEKLY EARNINGS BY INDUSTRIES

Standing in the foremost rank of progressive industrial States, Massachusetts presents wage statistics which, for their completeness and accuracy, are unsurpassed by those of any other American commonwealth. It would not perhaps be fair to say unrivalled by the statistics of any other commonwealth, yet a student of State wage statistics must incline strongly to that view. While the same statistics are collected in other States, the method of presentation adopted by the Massachusetts Bureau of Labor is probably superior to the method employed in any other State, with the exception of New Jersey.

An examination has already been made of the wage schedules and the general method of presentation employed in the Massachusetts wage reports. It remains to present, in some detail,

WAGE STATISTICS OF MASSACHUSETTS

the conclusions which may be reached from a study of Massachusetts wage statistics. These statistics will be discussed in greater detail than those of the other leading States, because of their inherent excellence, as well as because most of the conclusions which can be drawn from the classified weekly earnings of Massachusetts are apparently similar to the conclusions deducible from the weekly earnings in similar industries of the other industrial States.

The value of the Massachusetts statistics consists primarily in their presentation, by industries, of the classified weekly earnings of the males, females and young persons employed in the manufacturing industries. These statistics involve considerable detail, but an excellent idea of their significance may be gained from a summary, first of totals for the entire State, and then of detailed statements regarding the industries employing the various classes of wage earners,—males, females, and young persons. This classification is made because, as a rule, there is a marked contrast in the wages between industries which employ a large proportion of males and those which employ a large proportion of females.

During the “week of employment of greatest

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PERCENTAGES OF ADULT MALES RECEIVING CERTAIN CLASSIFIED WAGES.—MASSACHUSETTS, 1908¹

CLASSIFIED WEEKLY WAGES

Industries	Total Adult		\$5, but		\$6, but		\$7, but		\$8, but		\$9, but		\$10, but		\$12, but		\$15, but		\$20 and		Totals
	Male Wage	Under	\$5	Under	\$6	Under	\$7	Under	\$8	Under	\$9	Under	\$10	Under	\$12	Under	\$15	Under			
																			Earners.	Per Ct.	
Cotton Goods.....	48,472	3	4	9	15	14	14	14	18	14	6	3	100								
Boots & Shoes....	49,619	3	1	3	4	6	7	13	21	26	16	100									
Foundry & Machine Shop.....	34,698	*	*	2	4	9	13	18	22	26	6	100									
Worsted Goods....	14,267	*	4	7	10	14	12	17	19	14	3	100									
Woollen Goods. . .	11,643	2	2	7	14	14	14	21	16	8	2	100									
Leather (tanned & finished).....	10,623	1	1	3	7	10	17	27	18	14	2	100									
Paper & Wood Pulp	8,306	*	*	2	3	5	24	29	19	14	4	100									
Dyeing & Finishing	6,443	*	1	6	14	30	17	11	8	6	6	100									
Furniture.....	5,997	2	2	3	8	10	17	20	21	14	3	100									
Jewelry.....	4,819	1	1	2	4	6	5	13	21	27	20	100									

* Less than 1 per cent.

¹ Statistics of Manufactures for the year 1908. Pub. Doc. No. 36. Boston, 1909. Table V.

NOTE.—All percentages in this and the following tables throughout the book were computed from the State reports, which publish numbers only.

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number of wage earners," the ten foregoing industries employed the largest number of adult males (21 years of age and over) and paid them the wages indicated.

These industries are really divisible, according to the numbers employed, into two groups,—those industries employing more than forty thousand persons, and those employing less than fifteen thousand persons. Between these two extremes not a single industry appears. A study of the above table shows that wages range much lower in the textile industries. Thus in Cotton Goods, Worsteds, Woollens and Dyeing and Finishing, there are respectively 31, 21, 25 and 21 per cent. of the employees under \$8 a week. In the other industries these percentages are much lower, with a maximum in Furniture of 15 per cent., and a minimum in Foundry and Machine Shop of 6 per cent.

Similar deductions may be made from an analysis of the higher wage group. In the textile industries (Cotton, Worsteds, Woollens and Dyeing and Finishing) there are respectively 9, 17, 10 and 12 per cent. of employees receiving more than \$15 per week, while in the other industries the percentages above \$15 per week are,—

WAGES IN THE UNITED STATES

Boots and Shoes.....	42 per cent.
Foundry and Machine Shop.....	32 per cent.
Leather.....	16 per cent.
Paper.....	18 per cent.
Furniture.....	17 per cent.
Jewelry.....	47 per cent.

The proportion of wage earners receiving above \$15 per week is therefore considerably higher in the non-textile than in the textile industries. The proportion is also far higher in the industries (Boots and Shoes, Foundry and Jewelry) in which the greatest skill is required, while in the less skilled industries the proportion is fairly stable at 17 per cent.

While no rules can be laid down regarding the variation of Massachusetts wages from industry to industry, it is apparent that considerable variation does exist. The presence of this variation is strikingly confirmed by a study of female wages in ten industries employing the largest number of females.

The conclusions which may be drawn from the distribution of females by industries are, however, somewhat different from those deducible from the employment of males, hence the following table presents the weekly wages of females in the ten Massachusetts industries employing the largest numbers of females.

WAGE STATISTICS OF MASSACHUSETTS

PERCENTAGE OF ADULT FEMALES RECEIVING CERTAIN CLASSIFIED WAGES.—MASSACHUSETTS, 1908¹

CLASSIFIED WEEKLY WAGES

Industries	Total Adult Female Wage Earners	\$5, but \$6, but \$7, but \$8, but \$9, but \$10, but \$12, but \$15, but \$20										Totals								
		\$5		\$6		\$7		\$8		\$9			\$10		\$12		\$15		\$20	
		Under	Per Ct.	Under	Per Ct.	Under	Per Ct.	Under	Per Ct.	Under	Per Ct.		Under	Per Ct.	Under	Per Ct.	Under	Per Ct.	Under	Per Ct.
Cotton Goods.....	38,609	5	10	16	19	18	15	14	3	*	*	3	1	100	100	100	100	100	100	
Boots & Shoes....	23,300	7	6	8	11	12	14	17	16	8	1	100	100	100	100	100	100	100	100	
Worsted Goods ...	10,703	1	6	20	22	19	10	14	7	1	*	100	100	100	100	100	100	100	100	
Hosiery and Knit Goods.....	5,433	10	14	14	17	17	15	11	2	*	*	2	1	100	100	100	100	100	100	
Woollen Goods....	5,426	6	11	16	16	15	12	17	6	1	*	6	1	100	100	100	100	100	100	
Clothing(women's)	3,855	8	9	16	19	13	13	13	7	2	*	7	2	100	100	100	100	100	100	
Confectionery.....	2,734	23	20	21	16	7	2	2	2	1	1	2	1	100	100	100	100	100	100	
Boots and Shoes (rubber).....	2,491	*	1	7	13	18	44	14	3	*	*	3	*	100	100	100	100	100	100	
Paper & Wood Pulp	3,842	9	15	39	23	9	3	2	*	*	*	*	*	100	100	100	100	100	100	
Jewelry	2,156	4	7	13	15	17	13	15	9	6	1	100	100	100	100	100	100	100	100	

* Less than 1 per cent.

¹ Ibid.

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An analysis of this table shows that there is a very wide range in female wages, which can best be illustrated by showing, as before, the percentage of employees receiving less than a certain sum per week. For the industries under consideration, the percentage of women receiving less than \$6 per week in these is,—

Cotton Goods.....	15 per cent.
Boots and Shoes.....	13 “
Worsteds.....	7 “
Hosiery.....	24 “
Woollens.....	17 “
Clothing.....	17 “
Confectionery.....	48 “
Boots and Shoes (rubber).....	1 “
Paper.....	24 “
Jewelry.....	11 “

The variation in the wages of females under \$6 is thus considerably greater than the variation in the wages of males under \$8; falling as low as 1 per cent. in the Boot and Shoe industry, rising to 48 per cent. in the Confectionery industry.

If, on the other hand, the wages above \$12 be considered, the percentages are,—

Cotton Goods.....	3 per cent.
Boots and Shoes.....	25 “
Worsteds.....	8 “
Hosiery.....	2 “

WAGE STATISTICS OF MASSACHUSETTS

Woollens	7	per cent.
Clothing	9	"
Confectionery	4	"
Boots and Shoes (rubber)	3	"
Paper	—	
Jewelry	16	"

Of the ten Massachusetts industries employing the largest number of adult females, three (Hosiery, Confectionery and Paper) report more than one-fifth of their female employees as receiving less than \$6 per week. Only two (Boots and Shoes and Jewelry) report more than one-tenth of their female employees as receiving over \$12 per week. From one-fourth to two-fifths of the adult female employees receive from \$6 to \$8 per week, so that the range of wages for adult females is from \$6 to \$12, the highest proportion receiving from \$6 to \$8.

This brief survey of the two groups of industries employing, respectively, the largest numbers of men and of women, reveals considerable wage variation from industry to industry. Apparently some industries maintain a distinctly higher wage standard than others, a condition which may, in part, be explained by the following sections.

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II. WAGES BY SEX

Following the contrasts, presented in the last section, between the wages paid in the industries employing the largest number of adult males and those employing the largest number of adult females, an attempt will now be made to compare the wages of males and of females in five industries employing equal proportions of males and females. It is commonly assumed that the presence of a large proportion of women in an industry is a sure sign of a low-paid industry, or, put differently, that the women, by entering certain industries, lower wages through their active competition with men. To what extent the presence of women causes or, perhaps better, indicates low wages, it will be the purpose of this section to determine.

Figures purporting to show the relative wages of men and women are, of necessity, unsatisfactory, since the amount and quality of product, and the skill required in production, may all vary from one sex to the other. Hence it is unfair to conclude, because men and women are working in the same industry and receiving different wages, that therefore discrimination exists against

WAGE STATISTICS OF MASSACHUSETTS

PERCENTAGE OF ADULT MALES AND FEMALES RECEIVING CLASSIFIED WEEKLY WAGES IN MASSACHUSETTS INDUSTRIES, HAVING AN APPROXIMATELY EQUAL PROPORTION OF MALES AND FEMALES.—MASSACHUSETTS, 1908.¹

CLASSIFIED WEEKLY EARNINGS

Industries	Total Em- ployees	\$5, but \$6, but \$7, but \$8, but \$9, but \$10, but \$12, but \$15, but \$20 and										Totals									
		Under \$5		\$6		\$7		\$8		\$9		\$10		\$12		\$15		\$20		Over \$20 Per Ct	
		Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.			
Cotton	Male 48,472	3		4		9		15		14		14		18		14		6		3	100
Goods	Female 38,609	5		10		16		19		18		15		14		3		—		—	100
Clothing	Male 2,172	1		1		2		3		6		9		19		23		26		10	100
(Men's)	Female 2,564	12		15		17		18		13		12		10		3		*		*	100
Carpets	Male 2,662	1		2		4		7		22		8		15		19		15		7	100
& Rugs	Female 2,233	5		8		17		13		14		16		23		4		*		—	100
Paper	Male 1,498	*		*		1		3		5		14		19		25		25		8	100
Goods	Female 1,063	7		12		21		25		14		8		9		4		*		—	100
Book-binding	Male 1,012	1		1		2		3		5		9		14		21		32		12	100
	Female 909	5		12		19		28		13		10		9		3		1		—	100

Less than 1 per cent.

¹ Ibid.

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the women. In fact, the conditions of many industries are such that men do the skilled, technical work almost exclusively, while women do the semi-skilled work demanding dexterity and speed. Whatever the explanation of the difference may be, there is a marked contrast between the wages of men and of women employed in the same industries.

The statistics of the five industries employing the largest numbers, in which the proportion of males and females was practically the same, appear on the preceding page.

Those employees receiving less than \$6 a week furnish the following percentages,—

	Male	Female
Cotton Goods.....	7 per cent.	15 per cent.
Clothing (Men's).....	2 “	27 “
Carpets and Rugs.....	3 “	13 “
Paper Goods.....	1 “	19 “
Bookbinding.....	2 “	17 “

Thus, practically none of the adult males in these five industries receive less than \$6 per week, while the proportion of females receiving less than \$6 ranges from one-eighth to more than one-quarter of the total. Similar results are secured by computing the percentage of males and females who receive more than \$12 per week.

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	Males	Females
Cotton Goods.....	23 per cent.	3 per cent.
Clothing (Men's).....	59 “	13 “
Carpets and Rugs.....	41 “	4 “
Paper Goods.....	58 “	4 “
Bookbinding.....	65 “	4 “

The result is even more striking in this comparison of percentages of over \$12 per week than in the comparison of percentages under \$6 per week. Nearly half of the males employed in these industries receive more than \$12, while the proportion of females receiving more than \$12 exceeds 10 per cent. in only one instance, ranging in the others from 3 to 4 per cent. Whatever the explanation, a sharp contrast exists between the wages of males and of females in the Massachusetts industries employing equal numbers of both sexes.

III. THE WAGES OF “YOUNG PERSONS”

Unlike all other State statistics, the Massachusetts report refers to “young persons” as those persons who are under 21 years. As the usual maximum for minors is 16 years, any comparison with other States is somewhat difficult. Accepting the Massachusetts classification, however, a brief note will be made on the wages of the

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minors employed in that State. The five industries employing the greatest number of minors, with the classified weekly earnings in each, are on the following page.

An analysis of this table shows a slight similarity between the wages of minors and the wages of women. Thus, of the five industries under consideration, the percentage of minors who received less than \$6 per week is,—

Cotton Goods.....	47 per cent.
Boots and Shoes.....	37 “
Worsteds.....	33 “
Foundry Products.....	38 “
Confectionery.....	80 “

In none of these five industries do more than 9 per cent. of the minors receive over \$8 per week. As with the women in Massachusetts, so with the minors, wages range below \$6 for a goodly proportion, while almost none of the minors receive more than \$9. The maximum of wages for any large group of women was \$12, hence the wages of minors are somewhat below the wages of women in the upper wage groups.

The range of the entire group of minors' wages is somewhat lower than that for females, with the exception of Confectionery, which appears from

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WEEKLY WAGES OF MINORS IN THE FIVE MASSACHUSETTS INDUSTRIES EMPLOYING THE GREATEST NUMBER OF MINORS.—1908¹

CLASSIFIED WEEKLY WAGES

Industries	Total Minors Employed	\$3, but \$5, but \$6, but \$7, but \$8, but \$9, but \$10 and											
		Under	under	under	under	under	under	under	under	under	under	Over	Total
		\$3	\$5	\$6	\$7	\$8	\$9	\$10	\$10	\$10	\$10	\$10	Per Ct. Per Ct. Per Ct. Per Ct. Per Ct. Per Ct.
		Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.
Cotton Goods.....	19,348	2	23	22	24	14	8	3	4	100			
Boots and Shoes.....	8,797	3	17	17	19	15	9	9	11	100			
Worsted.....	7,007	*	8	25	32	16	11	4	4	100			
Foundry and Machine Shop....	3,011	1	18	19	21	16	10	9	6	100			
Confectionery.....	2,399	*	56	24	14	4	1	1	1	*			

* Less than 1 per cent.

¹ Ibid.

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both the wages of females and of minors to be a very low-paid industry. The range of the percentages of minors who earn less than \$6 per week is very slight, probably showing that the character of their occupation is very similar as regards skill, judgment and like qualities.

In Massachusetts, therefore, for the five industries employing the largest numbers, nearly one-half of the minors employed received less than \$6 per week. For the State at large, 80,944 minors were employed, of whom 37,271, or 46 per cent., received less than \$6 per week. The five largest industries and the entire State are remarkably similar in this,—that approximately the same percentage of women and of minors is paid a weekly wage of six dollars.

IV. WEEKLY WAGES IN THE FOUR CHIEF INDUSTRIES

The statistics thus far presented show for Massachusetts the variation in classified weekly wages from industry to industry, from sex to sex, and from adults to minors. The remaining task, by far the most difficult, is a summary of the wages in Massachusetts, in an attempt to answer that fundamental question,—“What are

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wages?" This summary can best be presented in two ways:—First, by a statement of classified weekly earnings for the entire State; second, by a study of classified weekly earnings in the four industries of the State employing the largest number of persons.

The following summary of classified weekly wages for the entire State is computed from page 82 of the Massachusetts Report for 1908.

CLASSIFIED WEEKLY WAGES—ALL INDUSTRIES, WITH PERCENTAGE IN EACH WAGE GROUP FOR MALES, FEMALES AND YOUNG PERSONS (UNDER 21 YEARS).—MASSACHUSETTS, 1908¹

Classified Weekly Earnings	Adult Males (21 yrs. and over)		Adult Females (21 yrs. and over)		Young Persons (under 21 yrs.)	
	Per		Per		Per	
	No.	Ct.	No.	Ct.	No.	Ct.
Under \$5.....	5,049	1	10,945	8	19,352	24
\$5 to \$6.....	6,216	2	14,610	10	17,919	22
6 to 7.....	13,584	4	23,309	16	18,057	23
7 to 8.....	22,469	7	24,414	17	10,854	14
8 to 9.....	31,472	9	21,780	15	6,399	8
9 to 10.....	41,399	12	18,609	13	4,196	5
10 to 12.....	61,632	17	18,426	13	2,810	3
12 to 15.....	70,293	20	8,769	6	1,032	1
15 to 20.....	69,996	20	3,363	2	281	*
20 and over.....	28,008	8	710	*	44	*
Totals.....	350,118	100	144,935	100	80,944	100

* Less than 1 per cent.

Thus, in 1908, of the adult male wage workers in Massachusetts, one-half received less than \$12

¹ Supra, p. 82.

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per week; among the adult females, nine-tenths received less than \$12 per week; while among the "young persons" (under 21 years of age) there were less than 2 per cent. who received over \$12. On the other hand, while slightly more than one-quarter of the males received over \$15 per week, only one-fiftieth of the females can be included in this class, and the "young persons" do not appear at all. Seven-tenths of all adult males receive weekly wages ranging from \$9 to \$20, while more than four-fifths of the adult females receive from \$5 to \$12 per week. The classified weekly wages of the adult males of Massachusetts are therefore almost twice as high as the wages of the adult females.

The Massachusetts statistics for "young persons" include all ages up to 21 years. As the figures are for neither children nor adults, they are comparatively valueless. Hence, because of their slight value, and to reduce the quantity and complexity of the data presented, they will be largely omitted from the following discussion.

The second approach to a summary of wages in Massachusetts may be made by a study of the four industries employing more than 25,000 workers each. These industries, in the order of the

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numbers of persons employed, are Cotton Goods, Boots and Shoes, Foundry and Machine Shops, and Worsted Goods. The tables of classified weekly earnings of the males and females in these industries follow.

PERCENTAGES OF ADULT MALES AND FEMALES (21 YEARS OF AGE AND OVER), RECEIVING CLASSIFIED WEEKLY WAGES IN THE FOUR MASSACHUSETTS INDUSTRIES EMPLOYING THE LARGEST NUMBER OF PERSONS.—MASSACHUSETTS, 1908¹

Classified Weekly Earnings	Cotton Goods		Boot and Shoe Industry		Foundry and Machine Shops	Worsted Goods	
	Adult Males	Adult Females	Adult Males	Adult Females	Adult Males	Adult Males	Adult Females
	Per cent.		Per cent.		Per cent.	Per cent.	
Under \$5.....	3	5	3	7	*	*	1
\$5 but under \$6..	4	10	1	6	*	4	6
6 " " 7...	9	16	3	8	2	7	20
7 " " 8...	15	19	4	11	4	10	22
8 " " 9...	14	18	6	12	9	14	19
9 " " 10...	14	15	7	14	13	12	10
10 " " 12...	18	14	13	17	18	17	14
12 " " 15...	14	3	21	16	22	19	7
15 " " 20...	6	*	26	8	26	14	1
20 and over.....	3	*	16	1	6	3	*
Totals.....	100	100	100	100	100	100	100

* Less than 1 per cent.

Cotton Goods, the largest Massachusetts industry, in so far as the number of employees is concerned, pays the lowest wages of any of the leading industries. Of the adult males (over 21 years) nearly one-third receive under \$8 per

¹ Ibid.

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week, while four-fifths of the total adult males receive less than \$12 per week, leaving only one-tenth of the entire number of adult males with weekly incomes of over \$15. The wages of the adult females (over 21 years of age) are lower than the wages of adult males, but not lower in the proportion that they are in other industries. Half of the adult females receive less than \$8 per week, nearly a half receive wages ranging from \$8 to \$12, leaving only one-twentieth of the adult females with weekly wages over \$12, and none with weekly wages over \$15.

In the second largest Massachusetts industry (Boots and Shoes), wages range considerably higher than in Cotton Goods. Thus, among the adult males, only one-tenth receive less than \$8 per week, as compared with one-third in Cotton Goods; two-fifths receive wages of less than \$12 per week, as contrasted with four-fifths in Cotton Goods; while two-fifths receive more than \$15 per week, as contrasted with one-tenth in Cotton Goods.

Among the adult females, however, the wages range higher than the Cotton Goods wages. A third, instead of a half, receive less than \$8, while three-quarters, instead of nineteen-twentieths,

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receive wages under \$12. Nearly one-tenth of the adult females in this industry receive more than \$15 per week.

From these two industries, the conclusion is obvious that, for a man settling in Massachusetts, a Boot and Shoe town is infinitely preferable to a Cotton Mill town, in so far as wages are concerned. The work may be harder or more technical, but the difference in wage between the two industries is very considerable.

The third industry, Foundry and Machine Shop, employs males only. In this industry wages range lower than in the Boot and Shoe industry, but much higher than in the Cotton Goods industry. One-twentieth of those employed receive less than \$8 per week; nearly one-half receive less than \$12 per week; while one-third receive wages of more than \$15 per week. Thus, while there are fewer Foundry workers who receive less than \$8 per week than there are Boot and Shoe workers, there are considerably more Boot and Shoe workers (two-fifths) who receive over \$15 per week than there are among Foundry workers (one-third).

The Worsted industry, the last of the four leading Massachusetts industries, is more similar

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to the Boot and Shoe than to any of the others, as the following comparison for adult males will show.

PERCENTAGES OF ADULT MALE EMPLOYEES RECEIVING CERTAIN WEEKLY WAGES.—MASSACHUSETTS, 1908

Weekly Earnings	Cotton Goods	Boots and Shoes	Foundry	Worsted Goods
Under \$8.....	31	11	6	21
Under 12.....	77	37	46	64
Under 15.....	91	58	68	83
Over 20.....	3	16	6	3

Thus the Boot and Shoe industry pays by far the best wages to adult males, while the lowest wages are paid in the Cotton industry.

A similar table for adult females brings out like contrasts.

PERCENTAGE OF ADULT FEMALES RECEIVING CERTAIN WEEKLY WAGES.—MASSACHUSETTS, 1908.

Weekly Earnings	Cotton Goods	Boots and Shoes	Worsted Goods
Under \$6	15	13	7
Under 8.....	50	32	49
Under 12.....	97	75	92
Over 15.....	—	9	1

While the variation between the wages of these adult females is not so great as that between the

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wages of adult males, it is none the less considerable between the Boot and Shoe industry, with three-quarters of the adult females receiving less than \$12 per week, and the other two industries, with more than nine-tenths receiving a weekly wage of less than \$12.

V. CLASSIFIED ANNUAL EARNINGS IN MASSACHUSETTS

It is then, from these statistics of the wages in all Massachusetts industries, and in the four leading industries, that an attempt must be made to show the average annual earnings in Massachusetts.

Like all wage statistics furnished by manufacturers, the Massachusetts wages are somewhat unsatisfactory as a basis for computing annual earnings. "The actual earnings of the individual wage earner for a year cannot be determined from the records kept by employers,—for should it happen that one factory was idle, an operative might secure temporary employment in the same line of work with some other manufacturer, and in that way have his time fully occupied." ¹

On the other hand, a factory may work con-

¹ *Supra*, p. xxiv.

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tinuously during the 305 working days of the year, but an individual may, during that time, lose 30 days from sickness. The returns from the manufacturer would not show this loss, which could be ascertained only by having a census of individuals.

While the extent of unemployment due to personal causes such as sickness is not directly determinable, the Massachusetts statistics do furnish the amount of unemployment caused by the cessation of work in the factories. This ascertainable unemployment must be deducted from the "weekly earnings" in any industry before they form a true basis for estimating the amount annually paid in cash to the employee.

Too much emphasis cannot be laid on this subject of unemployment. A man receives \$3 a day. "That," says the man on the street, "is enough." Enough for one day? Perhaps. But this worker may be employed only 200 of the 300 working days in the year, and his \$3 for the days when he has work shrinks to \$2 when averaged with the days when he has no work. Unemployment is, moreover, a constant factor in industry, and even in "prosperous" years it must be reckoned with, while in the lean years it is a spectre

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of appalling magnitude to the average working-man.¹

The Massachusetts Report for 1908 furnishes excellent statistics of the unemployment in each industry. Before drawing final conclusions as to wages in Massachusetts, it therefore becomes necessary to inquire into the extent of unemployment during 1908.

For the entire State, the manufacturers report 275 days worked out of a possible 305 working days. Or, expressed in percentages, the manufacturers of the State were unemployed 12 per cent. of the working time. The table of Classified Weekly Earnings, after being multiplied by 52, must be reduced by 12 per cent. in order to represent an accurate average for the year. The stated weekly earnings, after subtracting 12 per cent. for unemployment, would give, in annual earnings, the percentages at the top of the following page.

Of the three hundred and fifty thousand adult male wage workers in Massachusetts, slightly more than one-third receive less than \$459 per year; seven-tenths earn less than \$686 per year; more than nine-tenths earn less than \$915 per

¹ "The Extent of Unemployment in the U. S." Scott Nearing. Publications of the Am. Statistical Ass'n, September, 1909, page 525.

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CUMULATIVE PERCENTAGES OF ADULT MALES AND ADULT FEMALES RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED), ALL MASSACHUSETTS INDUSTRIES, 1908

Classified Yearly Earnings	Adult Males	Adult Females	Young Persons
	(21 years and over) Per cent.	(21 years and over) Per cent.	(under 21 years) Per cent.
Under \$229.....	1	7	24
“ 275.....	2	17	46
“ 320.....	5	33	69
“ 366.....	12	50	83
“ 412.....	21	65	91
“ 459.....	35	79	96
“ 549.....	52	92	99
“ 686.....	72	98	100
“ 915.....	92	100	*
Over 915.....	8	*	*

* Less than 1 per cent.

year; while only one-twelfth earn over \$915 annually. Thus, for the adult male wage workers of one of the leading industrial States, the actual annual earnings of nine-tenths are less than \$900 per year. The wages of the adult females are considerably lower than those of the adult males. Half of these workers earn less than \$366 annually; three-quarters earn less than \$459 annually; while only one-fiftieth earn more than \$686 per year.

These statistics for an entire State, including very diverse industries, may well be supplemented by statistics of the leading individual

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industries. The classified weekly earnings of the four leading Massachusetts industries have already been stated. It remains, however, to estimate the annual earnings in each industry by deducting from the average weekly earnings the percentage of time during which the industry was not operating its plants.

In the Cotton Goods industry the percentage of unemployment amounted, as in the entire State, to 12 per cent. Making this deduction from the average weekly wages, the figures are,—

CUMULATIVE PERCENTAGES OF ADULT MALES AND ADULT FEMALES RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE COTTON GOODS INDUSTRY.—MASSACHUSETTS, 1908

Classified Yearly Earnings	Adult Males (21 years and over) Per cent.	Adult Females (21 years and over) Per cent.
Under \$229.....	3	5
“ 275.....	7	15
“ 320.....	16	31
“ 366.....	31	50
“ 412.....	45	68
“ 459.....	59	83
“ 549.....	77	97
“ 686.....	91	100
“ 915.....	97	*
Over 915.....	3	*

* Less than 1 per cent.

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The contrast between these figures and the figures for the State at large is striking for the males, but negligible for the females. Briefly summarized, the percentages of adult males earning certain annual amounts were,—

	Entire State Per cent.	Cotton Goods Per cent.
Under \$459.....	35	59
“ 686.....	72	91
“ 915.....	92	97

Thus the wages of adult males are considerably lower in the Cotton Goods industry than in the industries of the State at large.

CUMULATIVE PERCENTAGE OF ADULT MALES AND ADULT FEMALES RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE BOOT AND SHOE INDUSTRY.—MASSACHUSETTS, 1908

Classified Yearly Earnings	Adult Males (21 years and over) Per cent.	Adult Females (21 years and over) Per cent.
Under \$239.....	3	7
“ 287.....	4	13
“ 335.....	7	21
“ 383.....	11	32
“ 431.....	17	44
“ 478.....	24	58
“ 574.....	37	75
“ 717.....	58	91
“ 957.....	84	99
Over 957.....	16	1

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The unemployment in the Boot and Shoe industry was only 8 per cent., leaving the annual earnings as follows,—

Under \$478.....	24	per cent.
“ 717.....	58	“
“ 957.....	84	“

Thus there are one-sixth of the adult male Boot and Shoe workers earning more than \$957 annually.

CUMULATIVE PERCENTAGES OF ADULT MALES RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE FOUNDRY AND MACHINE SHOP INDUSTRY.—MASSACHUSETTS, 1908

Classified Yearly Earnings	Adult Males Per cent.
Under \$226.....	*
“ 271.....	*
“ 317.....	2
“ 362.....	6
“ 407.....	15
“ 452.....	28
“ 543.....	46
“ 679.....	68
“ 905.....	94
Over 905.....	6

* Less than 1 per cent.

The range in the Foundry and Machine Shop industry is not so high as that in the Boot and

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Shoe industry. The unemployment is considerably greater, amounting to 13 per cent. Reducing the classified weekly earnings in this proportion, it appears that,—of the adult male wage earners,—

28 per cent. receive less than.....	\$407
46 “ “ “ “	543
94 “ “ “ “	905

and 6 per cent. receive more than \$905.

CUMULATIVE PERCENTAGES OF ADULT MALES AND ADULT FEMALES RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE WORSTED INDUSTRY.—MASSACHUSETTS, 1908

Classified Yearly Earnings	Adult Males (21 years and over)	Adult Females (21 years and over)
	Per cent.	Per cent.
Under \$247.....	*	1
“ 296.....	4	7
“ 346.....	11	27
“ 395.....	21	49
“ 445.....	35	68
“ 494.....	47	78
“ 583.....	64	92
“ 741.....	83	99
“ 988.....	97	100
Over 988.....	3	—

* Less than 1 per cent.

The unemployment in Worsted Goods is considerably less than in the Machine Shop industry

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(only 5 per cent.), hence the classified earnings of both males and females range considerably higher in that industry. The wages are generally much higher than in the Cotton industry, and lower than in either the Boot and Shoe or the Foundry industry.

Therefore, in conclusion, it may be fairly stated that not more than one adult male wage earner in every twenty employed in the industries of Massachusetts receives, in annual earnings, for a normally prosperous year, more than \$1000. On the other hand, more than one-third of all the adult males are paid wages under \$500; more than one-half receive wages under \$600; while nearly three-quarters receive less than \$700 annually. These figures are derived from a study, first of the State of Massachusetts as a whole, and second, from the four leading industries. Furthermore, they are maximum figures, for no deduction is here made for unemployment due to sickness, accident, death in the family, or other personal factors.

In Cotton Goods, the leading Massachusetts industry, wages are very much lower than in the State at large, nearly three-fifths of all the adult male employees receiving less than \$459 in 1908.

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In the Boot and Shoe industry, on the contrary, wages are higher than in the State at large.

The wages of adult females are very much lower than the wages of adult males. More than half of the adult females receive less than \$400 annually, while a vanishing fraction exceed an annual wage of \$700. In these two paragraphs are summarized the facts regarding wages in the State which collects and compiles wage statistics as accurate as, if not more accurate than, those of any of the States in the Union.

CHAPTER IV

WAGES IN NEW JERSEY

I. THE NEW JERSEY STATISTICS AND THOSE OF MASSACHUSETTS

The last chapter contained a discussion of the wages of Massachusetts in 1908. The New Jersey report on wages which covers the year 1909 is, in many respects, similar to that for Massachusetts. The average wages are presented in the same manner; weekly wages are similarly classified by industry, age and sex (except that adults in New Jersey are over sixteen and not over twenty-one, as in Massachusetts); the weekly earnings for the entire State are given; and the number of days worked is classified by industries. Because of the similarity in these two groups of wage statistics, and because an analysis of New Jersey statistics yields results very like those yielded in Massachusetts, no attempt will be made to substantiate the conclusions drawn in Chapter III

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regarding, (1) The extent of wage variation from industry to industry; and, (2) The extent of variation between the wages of adult males and adult females.

The present chapter will cover three points:

- (1) Classified weekly wages for the entire State.
- (2) Classified weekly earnings in the five industries employing the greatest number of persons.
- (3) Conclusions as to wages in New Jersey.

II. THE CLASSIFIED WEEKLY WAGES OF NEW JERSEY

As was the case in Massachusetts the really valuable statistics are contained in the tables of classified weekly earnings. In New Jersey these earnings are given for the State at large, and for each industry specifically, and contain wage data by age and sex. The table on the opposite page presents the classified weekly wages for the entire State.

One quarter of the men over sixteen years, and four-fifths of the women over sixteen years, receive less than \$9 a week; one-half of the men and nineteen-twentieths of the women receive less

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PERCENTAGES OF EMPLOYEES RECEIVING CERTAIN
CLASSIFIED WEEKLY EARNINGS—ALL NEW JERSEY
INDUSTRIES, 1909¹

Classified Weekly Earnings	Men (16 years and over) Per cent.	Women (16 years and over) Per cent.	Minors (under 16 years) Per cent.
Under \$5.....	4	22	85
\$5 but under \$6.....	3	19	11
6 " " 7.....	5	19	3
7 " " 8.....	6	13	1
8 " " 9.....	8	9	—
9 " " 10.....	15	7	—
10 " " 12.....	16	6	—
12 " " 15.....	17	4	—
15 " " 20.....	17	1	—
20 and over.....	9	—	—
	100	100	100
Total employed....	204,782	68,360	5,822

than \$12 a week; while one-quarter of the men and 1 per cent. of the women are paid more than \$20 per week. A noticeable thing about this table is the small proportion of women among the New Jersey industrial workers—only one to three—a proportion considerably less than that in Massachusetts. The wages of the women are very considerably lower than the wages of the

¹ Annual Report, Bureau of Statistics of New Jersey, 1909, Camden, 1910, p. 120.

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men. Thus, of the women, 60 per cent. receive less than \$7 per week, while of the men, 57 per cent. receive less than \$12 per week. This table shows a rate of wages very similar to that of the males and females of the entire State of Massachusetts.

The number of children employed in New Jersey is comparatively small, a little less than six thousand; and their wages are, in seventeen-twentieths of the cases, less than \$5 per week. The wages of New Jersey children (under 16 years of age) and of Massachusetts young persons (under 21 years of age), are of course incomparable because of the different statistical methods. The New Jersey figures show the wages of the children to be uniformly low—under \$250 a year in most cases, while the numbers of children are small.

III. CLASSIFIED WEEKLY WAGES IN THE FIVE INDUSTRIES EMPLOYING THE LARGEST NUMBERS OF WAGE EARNERS

The study is again made more effective if the chief industries are studied separately and compared.

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PERCENTAGES OF CLASSIFIED WEEKLY EARNINGS OF MEN AND WOMEN (16 YEARS AND OVER) IN THE FIVE LEADING INDUSTRIES
—NEW JERSEY, 1908¹

Earnings	Manufacture of Machinery		Silk Industry (Broad and Ribbon)	
	Men	Women	Men	Women
	(16 years and over) Per cent.	(16 years and over) Per cent.	(16 years and over) Per cent.	(16 years and over) Per cent.
Under \$5.....	4	29	5	13
\$5 but under \$6.....	2	17	4	10
6 " " 7.....	3	18	5	16
7 " " 8.....	5	16	7	16
8 " " 9.....	7	9	6	10
9 " " 10.....	8	5	9	8
10 " " 12.....	13	5	16	12
12 " " 15.....	25	1	22	12
15 " " 20.....	24	*	21	3
20 and over.....	8	*	5	*
	100	100	100	100
Total number employed.....	19,930	602	10,574	10,818

Earnings	Manufacture of Oils	Woollen and Worsted Industry		Chemical Products	
	Men	Men	Women	Men	Women
	(16 years and over) Per cent.	(16 years and over) Per cent.	(16 years and over) Per cent.	(16 years and over) Per cent.	(16 years and over) Per cent.
Under \$5.....	*	6	23	1	23
\$5 but under \$6.....	*	12	31	2	22
6 " " 7.....	2	12	16	3	20
7 " " 8.....	1	8	11	4	14
8 " " 9.....	1	8	4	7	11
9 " " 10.....	30	11	4	13	6
10 " " 12.....	18	13	6	28	3
12 " " 15.....	13	13	3	21	1
15 " " 20.....	28	10	2	15	*
20 and over.....	6	7	*	6	*
	100	100	100	100	100
Total number employed	8,850	5,205	5,438	5,567	1,935

¹ Supra, pp. 82-119.

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A comparison of these five industries shows a considerable variation in the wages of adult males. Thus, while 21 per cent. received less than \$9 per week in the manufacture of Machinery, the percentages under \$9 per week in the other industries were: Silk, 27 per cent.; Oils, 4 per cent.; Chemicals, 17 per cent., and Woollens, 46 per cent. Here is a direct relation between the standard of male wages and the proportion of women employed in the industry. In the industry with the least women (Oils), the percentage of men earning less than \$9 per week is the lowest, while in the two industries (Woollens and Silk) in which the proportion of men and women is practically equal, the percentage is highest. The same fact appears at the top of the wage scale. Of the employees in Oils, 34 per cent. receive more than \$20, while in the Woollens and Worsted industry the percentage falls to 7 per cent.

Turning to the wages of females, no such regular variation occurs. In the industry with the smallest proportion of females (Machinery), 64 per cent. of the women received less than \$7 a week; but in the Silk, Chemicals and Woollen industries, the percentages are 39, 65 and 70, respectively. Of course the women take very

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inferior positions in the Machinery industry, while in the other three industries they come into direct competition with men.

The wages of both males and females thus vary greatly from industry to industry; in the case of the males, in inverse relation to the number of women employed. In the case of the females, no rule of variation is apparent.

IV. ANNUAL EARNINGS IN NEW JERSEY

In New Jersey the statistics of classified earnings are carefully compiled, and while the industries are not so localized nor perhaps so representative as those of Massachusetts, the data based on them is of great value. Already the variation in wages from industry to industry has been established for Massachusetts and substantiated for New Jersey in the preceding paragraphs. It remains, at this point, merely to point out the annual earnings in New Jersey industries.

Again, as in Massachusetts, unemployment plays a leading rôle in the determination of annual earnings. Before a conclusion as to annual earnings can be formed, the extent of unemployment must, therefore, be considered. The industries of the State worked 278.5 days in

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1909,—that is, they lost 10 per cent. of the working time. Multiplying the weekly earnings by 52 and subtracting 10 per cent., the following table is secured:

PERCENTAGES OF EMPLOYEES RECEIVING CERTAIN CLASSIFIED ANNUAL EARNINGS (UNEMPLOYMENT DEDUCTED)—ALL NEW JERSEY INDUSTRIES, 1909

Classified Yearly Earnings	Males (16 years and over) Per cent.	Females (16 years and over) Per cent.	Minors (under 16 years) Per cent.
Under \$234.....	4	22	85
\$234 but under \$280.....	3	19	11
280 “ “ 328.....	5	19	3
328 “ “ 374.....	6	13	1
374 “ “ 422.....	8	9	—
422 “ “ 468.....	15	7	—
468 “ “ 563.....	16	6	—
563 “ “ 702.....	17	4	—
702 “ “ 936.....	17	1	—
936 and over.....	9	*	—
	100	100	100
Total employed...	204,782	68,360	5,822

* Less than 1 per cent.

It would seem from this table that two-fifths of the adult males in the industries of New Jersey earned less than \$500 in 1909; that three-fifths earned less than \$600; that three-quarters earned less than \$700; while less than one-tenth

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earned more than \$936. Like results are obtained from an analysis of wages in the five industries of the State employing the largest numbers of persons, although the unemployment, hence the annual earnings, varies considerably from industry to industry.

CUMULATIVE PERCENTAGES OF MEN AND WOMEN OVER SIXTEEN YEARS, RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE SILK (BROAD AND RIBBON) INDUSTRY— NEW JERSEY, 1909

Classified Yearly Earnings	Men	Women
	(16 years and over) Per cent.	(16 years and over) Per cent.
Under \$247.....	5	13
“ 296.....	9	23
“ 346.....	14	39
“ 395.....	21	55
“ 445.....	27	65
“ 494.....	36	73
“ 583.....	52	85
“ 741.....	74	97
“ 988.....	95	100
Over 988.....	5	—
Total employed....	10,574	10,818

The Silk (broad and ribbon) industry reports employment for 290 of a possible 305 days. Deducting this unemployment from the classified annual earnings, it appears that, of the adult males

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(16 years of age and over) one quarter received less than \$500 a year; one half less than \$600 a year; three-quarters less than \$750 a year; while only one-twentieth receive more than \$988 annually. The range of adult male wages in the Silk industry is thus considerably less than the range in the State at large. The wages of women are also low,—more than half of the women employed receive less than \$400 annually; while three-quarters receive less than \$500, and nineteen-twentieths receive under \$750.

CUMULATIVE PERCENTAGE OF MEN AND WOMEN RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE MANUFACTURE OF MACHINERY—NEW JERSEY, 1909

Classified Yearly Earnings	Men	Women
	(16 years and over) Per cent.	(16 years and over) Per cent.
Under \$239	4	29
“ 237	6	46
“ 335	9	64
“ 383	15	80
“ 431	12	89
“ 478	30	94
“ 574	43	99
“ 717	68	100
“ 957	92	—
Over 957	8	—
Total employed	19,930	602

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The Machinery industry, with 281 working days, pays much higher wages than those paid in the Silk industry. The numbers of males and females employed in the silk industry were almost identical, but in the manufacture of Machinery, at the less skilled tasks—such as core-making—only a small number of females are employed. Of the adult males engaged in the manufacture of Machinery one-third earned less than \$500; two-fifths earned less than \$600; three-fifths earned less than \$750; while one-twelfth earned more than \$957. Among the adult females, the wages are extremely low,—four-fifths earning under \$400, and nineteen-twentieths under \$500.

Wages in the Woollen and Worsted industry, while somewhat lower than those in the Machinery industry, are rather higher than wages in Silk, though the unemployment is the greatest reported from any of the leading New Jersey industries—272 days worked out of a possible 305. This heavy unemployment, of course, reduces earnings considerably. The wages are, nevertheless, high. The adult males, for example, report only about one-half under \$500; seven-tenths under \$600; four-fifths under \$750; and one-fourteenth over \$926. The wages of females

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are very similar in this industry to those of the Machinery industry, save that there are a few high-paid females in the Worsted industry, but none in the Machinery industry. Four-fifths of the adult females fall below \$400, and nine-tenths below \$500; but one-twentieth receive more than \$700 annually.

CUMULATIVE PERCENTAGES OF MEN AND WOMEN RECEIVING CLASSIFIED YEARLY EARNINGS (UN- EMPLOYMENT DEDUCTED) IN THE WOOLLEN AND WORSTED INDUSTRY—NEW JERSEY, 1909

Classified Yearly Earnings	Men (16 years and over)	Women (16 years and over)
Under \$231.....	6	22
“ 278.....	18	54
“ 324.....	30	70
“ 370.....	38	81
“ 417.....	46	85
“ 463.....	57	89
“ 555.....	70	95
“ 694.....	83	98
“ 926.....	93	100
Over 926.....	7	—
Total employed....	5,205	5,438

In the Chemical Products industry wages are very similar to those paid in the two textile industries just considered, except that unemployment is slight. One-third of the men earn less

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than \$500; three-fifths earn less than \$600; four-fifths earn less than \$750, while one-sixteenth receive more than \$988 annually. Of the women, four-fifths receive less than \$400; nine-tenths less than \$500; and only one-hundredth more than \$750 annually.

CUMULATIVE PERCENTAGES OF MEN AND WOMEN RECEIVING CLASSIFIED YEARLY EARNINGS (UN- EMPLOYMENT DEDUCTED) IN THE CHEMICAL PRODUCTS INDUSTRY—NEW JERSEY, 1909

Classified Yearly Earnings	Men	Women
	(16 years and over) Per cent.	(16 years and over) Per cent.
Under \$247.....	1	23
“ 296.....	3	45
“ 346.....	6	65
“ 395.....	10	79
“ 445.....	17	90
“ 494.....	30	96
“ 583.....	58	99
“ 741.....	79	100
“ 988.....	94	—
Over 988.....	6	—
Total employed....	5,567	1,935

Men are employed almost exclusively in the Oil industry, and their wages are higher than the wages in any other great New Jersey industry, partly because they range high in the wage scale,

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and partly because of steady employment. Only one-twenty-fifth are paid less than \$475 a year; one-third less than \$520; one-half receive less than \$600 a year; three-fifths are paid less than \$750 annually, and one-sixteenth receive more than \$1,040.

CUMULATIVE PERCENTAGES OF MEN RECEIVING CLASSIFIED YEARLY EARNINGS (UNEMPLOYMENT DEDUCTED) IN THE MANUFACTURE OF OILS—NEW JERSEY, 1909

Classified Yearly Earnings	Men (16 years and over) Per cent.
Under \$260.....	—
“ 312.....	—
“ 364.....	2
“ 416.....	3
“ 468.....	4
“ 520.....	34
“ 624.....	53
“ 780.....	66
“ 1,040.....	94
Over 1,040.....	6
Total employed.....	8,860

For the State of New Jersey at large, and for the five industries employing the largest numbers of persons, it appears that, after deducting the known unemployment, between one-third and one-half of the adult males received less than

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\$500 in 1909; that from one-half to three-fifths received less than \$600; that about three-quarters were paid less than \$750; nine-tenths received less than \$950; while from one-twentieth to one-tenth received \$950 or over. The wages of adult females were very much lower. From three-quarters to four-fifths received less than \$400; nine-tenths were paid less than \$500, while a vanishingly small percentage received an annual wage of more than \$750.

CHAPTER V

KANSAS WAGE STATISTICS

I. THE VALUE AND SCOPE OF THE KANSAS STATISTICS

The third State collecting and classifying wage statistics is Kansas. Though in this State the statistics are drawn from industries less general in character than those of Massachusetts and New Jersey, and though their presentation is less complete than in either of the other States, they are nevertheless sufficiently valuable to warrant a separate chapter.

Included in this Kansas investigation were 1,918 establishments, of which 1,553 reported classified weekly earnings "for the week during which the largest number were employed."¹ Only about four-fifths, therefore, of the establishments of the State reported classified weekly earnings. The 1,553 establishments which reported were

¹ Annual Report Kansas Bureau of Labor, 1909. Topeka, 1910. P. 10.

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employing 54,948 wage earners, of whom 50,720 were adult males, 3,599 were adult females, and 629 were children under 16 years of age; hence it is apparent that the wage problem of the Kansas industries is a problem neither of women nor of children, primarily, but of men.

The contrast is marked between Massachusetts and New Jersey, with tens of thousands of women and thousands of children at work, and Kansas, with three thousand six hundred women and six hundred children. In Massachusetts the women formed 30 per cent. of the total wage earners; in New Jersey, they formed 25 per cent.; but in Kansas, less than 7 per cent. of the total wage workers are women. A study of Kansas statistics must, therefore, lay its primary emphasis on the wages of men.

The Kansas report gives classified weekly wages, by industries, by age, and by sex, together with total wages, but the average wages are entirely omitted. So are unemployment statistics, which proved so important a factor in computing the annual earnings in Massachusetts and New Jersey. Owing to the absence of these unemployment figures, no such effective statement of annual earnings can be made for Kansas.

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While the Kansas wage statistics omit average wages and unemployment statistics, the tables of classified weekly earnings furnish a basis for an effective study, which will appear in the remaining sections of this chapter. Three points will be covered in the course of the chapter:—

1. Wages in all of the industries of the State.
2. Wages in a selected group of the industries employing the largest number of persons.
3. A summary of Kansas wage statistics, with an attempt to compute annual earnings.

II. WAGE GROUPING IN THE INDUSTRIES OF KANSAS

The classified wage statistics of all Kansas industries appear in the following table. As the few children under sixteen are scattered in a desultory manner over the various industries, they will be included in this table only. As a matter of fact, the child labor problem is a small one in Kansas, since there are only 629 working children in all, who are so distributed over the various industries that in only two cases are there more

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than 100 children in one industry (Bookbinding and Printing, 159; Slaughtering and Meat Packing, 213).

CLASSIFIED WEEKLY EARNINGS WITH PERCENTAGES IN EACH WAGE GROUP OF ADULT MALES AND ADULT FEMALES AND CHILDREN UNDER SIXTEEN. ALL INDUSTRIES—KANSAS, 1909¹

Classified Weekly Earnings	Adult Males (16 years and over) Per cent.	Adult Females (16 years and over) Per cent.	Children (under 16 years) Per cent.
Under \$5.....	2	25	58
\$5, but under \$6.....	1	17	8
6, " " 7.....	2	19	20
7, " " 8.....	3	12	10
8, " " 9.....	4	9	*
9, " " 10.....	14	6	4
10, " " 12.....	20	8	—
12, " " 15.....	24	2	—
15, " " 20.....	21	2	—
20, and over.....	9	*	—
	—	—	—
	100	100	100
Total employed....	50,720	3,599	629

* Less than 1 per cent.

Among the adult males the wages are relatively high, since only 12 per cent. of them receive less

¹ Annual Report, Kansas Bureau of Labor, 1909, Topeka, 1910. P. 10.

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than \$9 a week. Of the remaining 88 per cent., 34 per cent. receive wages between \$9 and \$12 per week; 24 per cent. fall between \$12 and \$15 weekly; while 30 per cent. receive more than \$15 per week. On the other hand, the wages of the females are rather low, 61 per cent. receiving less than \$7 per week; 21 per cent. from \$7 to \$9 per week, and only 4 per cent. over \$12 weekly.

The children (under 16 years) are comparable with the same group in New Jersey. As in the case of the wages of adult males, the wages of children in Kansas are slightly higher than the wages of children in New Jersey. Only 58 per cent. of the Kansas children fall below a weekly wage of \$5, as compared with 85 per cent. in New Jersey. The variation is not marked, however, and in each State the numbers included are too small to furnish an accurate comparison. Thus, 12 per cent. of the men receive less than \$9 per week, 82 per cent. of the women fall below that figure, and although 54 per cent. of the men receive wages of more than \$12 per week, only 4 per cent. of the women are in this class. The discrepancy between the wages of men and women is thus more striking in Kansas than in either Massachusetts or New Jersey.

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The reason for this discrepancy appears upon an analysis of the individual industries.

III. THE STATISTICS OF LEADING INDUSTRIES

The industries of Kansas are man dominated because they are, in almost all cases, industries demanding physical strength and skill. The extent of this male domination is indicated by the fact that only four of the industries report more than one hundred women employed, and of these four, two, Soap and Glass, are small industries reporting respectively 152 and 146 women. The only industries—Bookbinding and Printing and Slaughtering and Meat Packing—reporting the employment of many women, are large industries, with 957 and 973 women, respectively, in their establishments. It is, therefore, in these two industries alone that any extensive statement of the wages of women can be found.

Pursuant of this situation, the Kansas industries will be discussed in two separate groups—first: the two industries in which the largest number of women are employed; second: the eight additional industries reporting the employment of the largest number of men.

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PERCENTAGES OF ADULT MALES AND ADULT FEMALES RECEIVING CLASSIFIED WEEKLY EARNINGS IN THE TWO INDUSTRIES EMPLOYING THE LARGEST NUMBER OF ADULT FEMALES—KANSAS, 1909¹

Classified Weekly Earnings	Bookbinding and Printing		Slaughtering and Meat Packing	
	Adult Males (16 years and over) Per cent.	Adult Females (16 years and over) Per cent.	Adult Males (16 years and over) Per cent.	Adult Females (16 years and over) Per cent.
Under \$5.....	8	21	1	6
\$5, but under \$6.....	4	22	*	4
6, " " 7.....	4	20	2	34
7, " " 8.....	4	13	4	15
8, " " 9.....	5	7	4	11
9, " " 10.....	5	6	26	5
10, " " 12.....	10	6	27	18
12, " " 15.....	15	2	20	5
15, " " 20.....	25	3	12	2
20, and over.....	20	*	4	—
	—	—	—	—
	100	100	100	100
Total employed..	1,723	957	10,913	773

* Less than 1 per cent.

In the Printing industry, the men bear the relation to the women of 2 to 1; but in the Slaughtering Industry, the relation is 14 to 1. The investigations into the statistics of Massachusetts and New Jersey would lead one to expect the lowest wages in the industry in which the proportion of females is largest. Here, however, such is not the case. The Bookbinding and Printing Industry, dominated by a strong union,

¹ Supra, pages 13 and 26.

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and demanding peculiar qualities of skill and dexterity, employs a relatively large number of skilled men. One-fifth of all males employed in this industry receive weekly wages of more than \$20, while three-fifths of all of the men employed in the industry are paid more than \$10 a week. In decided contrast, only one-twenty-fifth of the male employees in the slaughtering industry receive more than \$20 a week, while only about one-third receive more than \$12 per week. Two-fifths of all of the male printing employees receive between \$12 and \$20, while half of the male slaughtering employees receive from \$10 to \$12. The standard of wages in the Slaughtering industry is distinctly lower—three-quarters of the wage earners are massed between \$9 and \$15 per week.

On the other hand, the wages of adult females are distinctly lower in the Printing industry, where three-fifths receive less than \$7 per week. In contrast with this, is the two-fifths in the Slaughtering industry who receive less than \$7. Again, as in the case of Massachusetts, it seems impossible to deduce any fixed rule regarding the variations, from industry to industry, in the relative wages of males and females.

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PERCENTAGES OF ADULT MALES RECEIVING CLASSIFIED WEEKLY WAGES IN THE INDUSTRIES EMPLOYING THE LARGEST NUMBERS OF ADULT MALES—KANSAS, 1909¹

Classified Weekly Earnings	Cars and Shop Construction			
	Brick and Tile Per cent.	Work Per cent.	Cement Per cent.	Coal Mining Per cent.
Under \$5.....	*	*	2	3
\$5, but under \$6.....	*	1	*	1
6, " " 7.....	3	2	*	1
7, " " 8.....	3	4	*	3
8, " " 9.....	5	7	2	2
9, " " 10.....	25	18	7	6
10, " " 12.....	28	19	14	10
12, " " 15.....	22	23	43	20
15, " " 20.....	10	18	23	32
20, and over.....	4	8	9	22
	<hr/>	<hr/>	<hr/>	<hr/>
	100	100	100	100
Total employed..	1,957	7,552	2,168	7,375

* Less than 1 per cent.

Classified Weekly Earnings	Flour and Foundries and Grist Mills Machine Shops			
	Per cent.	Per cent.	Glass Factories Per cent.	Smelting and Refining Per cent.
Under \$5.....	7	2	*	2
\$5, but under \$6.....	*	2	2	1
6, " " 7.....	*	3	8	1
7, " " 8.....	*	2	1	*
8, " " 9.....	3	3	1	*
9, " " 10.....	16	11	15	5
10, " " 12.....	27	17	10	31
12, " " 15.....	26	32	18	29
15, " " 20.....	15	20	17	26
20, and over.....	6	8	28	5
	<hr/>	<hr/>	<hr/>	<hr/>
	100	100	100	100
Total employed..	2,223	2,503	1,862	2,616

* Less than 1 per cent.

¹ Supra, pages 13-27.

KANSAS WAGE STATISTICS

There are eight other industries employing more than 1,000 adult males, but practically no adult females. Beyond showing the wage distribution within the industries, these tables can be of little real service. Here, also, the variation from industry to industry is considerable, and, so far as the statistics go, inexplicable. In all of the industries, the wages range rather high,—at least five-sixths of the employees earning more than nine dollars a week. There is also a considerable showing of high-paid men, particularly in coal mining and glass factories, where there are respectively 22 and 28 per cent. of earners receiving over \$20 per week. As will be indicated in a later section, unemployment is particularly prevalent in these two industries, yet the weekly wages are unusually high. An analysis of the table shows, in most of the industries, a massing of earners between the \$9 and \$15 wage. The percentages between these two extremes are:—

Brick and Tile.....	75 per cent.
Cars and Shops.....	60 “
Cement.....	64 “
Coal Mining.....	36 “
Flour.....	69 “
Foundries.....	60 “
Glass.....	43 “
Smelting.....	65 “

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With the exception of the two high-paid industries already mentioned, from three-fifths to three-quarters of all of the adult males are paid wages ranging from \$9 to \$15 per week. Bookbinding and Printing falls in the same class with Glass Factoring and Coal Mining, showing 30 per cent. of males between \$9 and \$15, while Slaughtering and Meat Packing reports 73 per cent. of the males in this class. The combined industries of the State reflect the general condition, with 58 per cent. of the adult male employees between \$9 and \$15 per week.

IV. SUMMARY OF KANSAS WAGES

The industrial conditions in Kansas differ in one notable respect from those in Massachusetts and New Jersey,—the industries of Kansas afford occupations for males and not for females. The male dominated industries are, on the whole, much higher paid than the female dominated industries,—a proposition elaborated in some detail in the case of Massachusetts. Hence the industries of Kansas would, by inference, pay higher wages than the industries of Massachusetts and New Jersey. And in truth, a high level of wages is maintained. Unfortunately, no direct

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comparisons of yearly earnings are possible, because the extent of unemployment is not given in the Kansas statistics. Therefore, in compiling the figures, the weekly wages are multiplied by 52.

CUMULATIVE PERCENTAGES OF CLASSIFIED YEARLY EARNINGS (COMPUTED) FOR THE STATE OF KANSAS AND FOR THE THREE KANSAS INDUSTRIES EMPLOYING MORE THAN FIVE THOUSAND PERSONS—1909¹

Classified Yearly Earnings (computed for 52 weeks)	Cars and	Coal	Slaughtering and		All Kansas	
	Shop Con-	Mining	Meat Packing		Industries	
	struction	Adult	Adult	Adult	Adult	Adult
	Adult Males Per cent.	Adult Males Per cent.	Adult Males Per cent.	Adult Females Per cent.	Adult Males Per cent.	Adult Females Per cent.
Under \$260.....	—	3	1	6	2	25
" 316.....	1	4	*	10	3	42
" 364.....	3	5	3	44	5	61
" 416.....	7	8	7	59	8	73
" 468.....	14	10	11	70	12	82
" 520.....	32	16	37	75	26	88
" 624.....	51	26	64	93	46	96
" 780.....	74	46	84	98	70	98
" 1,040.....	92	78	96	100	91	100
\$1,040 and over.	8	22	4	—	9	—
Total employed.	7,552	7,375	10,913	773	50,720	3,599

The above table is the result of the compilation. Cars and Shops and Mining are the only two industries aside from Slaughtering employing more than five thousand persons. These three industries, employing more persons than any other industries in Kansas, show a marked wage variation. The wages of males in Cars and Slaughtering are much

¹ Supra, pages 13-26.

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lower than in Mining and are remarkably similar. In both cases about one-third of the employees receive less than \$500; one-half less than \$600; three-quarters less than \$750; and less than one-tenth receive over \$1,000. There is a very good parallel between the wages of males in Cars and Shops and in the entire State; then, too, the wages of females in Slaughtering and in the entire State are similar in the upper half of the table. The mining wages are much higher than any others,—only a quarter of the miners falling below \$600, while a quarter show above \$1,000. The showing is apparent, however, rather than real, because the unemployment in the mines is very great. The latest available figures¹ for Kansas place the unemployment at 37 per cent. of the total working days in 1908, and 26 per cent. of the total in 1907. Compared with the unemployment in most industries—5 or 10 per cent.—this unemployment appears very excessive. Hence an annual wage, computed without reference to unemployment, is more than favorable to the miner. As before noted, the wages of females are noticeably lower than those of males,

¹ Production of coal in 1908. Edward W. Parker, U. S. Geographical Survey, Washington, 1909. P. 122.

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—the proportion of females earning less than \$520 is exactly twice that of males.

Thus, while the wages of Kansas are apparently above the wages of Massachusetts and New Jersey, the difference is more apparent than real. When the character of the industry and the factor of unemployment are taken into account, the Kansas wages show little higher than those of the two Eastern States for which accurate statistics are available.

CHAPTER VI

SPECIAL WAGE REPORTS

I. THE VALUE OF SPECIAL REPORTS

The material collected by State labor bureaus is of considerable value, but as has already been indicated, its dependability is, in most cases, greatly impaired by the varying methods of collection and presentation, and by the impossibility of determining, in each instance, exactly what method was employed. The State reports present a picture of varying accuracy, which is, in the case of most States, little more than a picture. In the preceding chapters, the more accurate State statistics have been discussed in detail. The present chapter includes a less comprehensive, but more specific group of statistics, contained in four special reports, which give the wages for three industries.

Within two years the Wisconsin Railroad Commission, the Illinois Bureau of Labor and the United States Bureau of Labor have completed four wage investigations which are detailed,

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specific, and, at the same time, sufficiently comprehensive to form the basis for reliable deductions. These reports constitute the best source of information at the disposal of a student of wages in the United States,—a statement which is particularly true of the two Federal investigations. Hence a chapter is devoted to their analysis, and great importance is attached to their contents.

To be sure, these reports do not justify specific conclusions for any industries other than those directly investigated. By inference, however, the conclusions regarding wages in the steel plant at South Bethlehem, Pa., may be applied to the steel plants at Philadelphia, Steelton, Johnstown and Pittsburg, and in this manner a relative estimate be made of wages of the Steel industry in Pennsylvania. As Pennsylvania heads the list of steel producing States, conclusions relative to wages in the Steel industry in Pennsylvania may with some precautions be applied to the Steel industry at large,—one of the leading industries of the United States. While, therefore, conclusions drawn by analogy from special wage reports are not absolutely reliable, they, nevertheless, contain some of the most dependable data available at the present writing.

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II. THE TELEPHONE INDUSTRY IN MILWAUKEE, WISCONSIN

Two points of particular value are emphasized in this investigation of the Wisconsin Railroad Commission. The first relates to wages paid to females in Milwaukee by the Wisconsin Telephone Company, the second, to the wages paid throughout the State to the females in trades requiring an amount of skill and training similar to that demanded in the Telephone industry.

The telephone investigation covers "operators" only, who are described as "skilled but not highly skilled." Their distribution over the wage scale is as follows:—

CLASSIFIED DAILY WAGES OF "OPERATORS" ONLY—
EIGHT CITY OFFICES.—MILWAUKEE, WIS.,¹ JULY
15, 1908

Rate per Day	Number (Cumulative)	Per cent. (Cumulative)
\$0.75.....	55	15
.85.....	116	32
1.00.....	212	59
1.15.....	271	74
1.25.....	352	96
1.35.....	365	99
1.50.....	367	100

¹ *Lorenz et al. vs. Wisconsin Telephone Co.*, Before the Railroad Commission of Wisconsin, December 30, 1908. P. 49.

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An analysis of this table shows that of the total number of female telephone "operators" in Milwaukee, on July 15, 1908, approximately one-third received less than 85 cents per day (\$260 per year); a half received less than \$1 per day (\$325 per year); three-quarters received less than \$1.15 per day (\$360 per year); while only one-twentieth received more than \$1.25 per day (\$400 per year). Four-fifths of the telephone operators of Milwaukee are thus distributed over the wage scale between \$260 and \$400 per year,—wages which are equal to \$5 and \$8 per week. The wages of a semi-skilled girl in Milwaukee, therefore, range from \$0.75 to \$1.50 per day (\$4.50 to \$9.00 per week), with an average wage of \$1.04.

In order to determine whether the Milwaukee Telephone operators were being underpaid, a careful comparison was made between wages in the Telephone industry, and in a group of selected industries which required a similar grade of intelligence and skill. The basis for this comparison was secured in a special report from the Wisconsin Bureau of Labor on female employees in sixteen other occupations, throughout the State, involving three hundred and sixteen different establishments. In order to make the comparison

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more accurate, the "highly skilled" and the "unskilled" workers were eliminated from the tables, leaving the following average wages in eight industries employing the largest numbers of women:¹

Occupation	Total Employees	Average Daily Wages
Fur and Gloves.....	630	\$1.112
Hats and Caps.....	319	1.930
Clothing.....	2,153	1.139
Paper and Pulp.....	85	1.163
Chairs.....	93	1.169
Awnings and Tents.....	198	.937
Boxes, Paper and Cigars ...	234	.965
Boots and Shoes.....	734	1.115

The average daily wages, with the exception of Hats and Caps (\$1.93) correspond very closely with the average for telephone operators (\$1.04). The comparison justifies the conclusion that, in the State of Wisconsin, a semi-skilled girl will be able to earn wages of about \$1.10 per day, \$6.50 per week, or \$340 per year, without making any allowance for unemployment, which would be particularly severe in manufacture of Hats and Caps, Clothing and Fur and Gloves.

These conclusions as to the wages of females in Milwaukee are somewhat different from the con-

¹ Supra, pp. 41-43.

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clusions derived from a study of wages in the department stores of Illinois (a neighboring, "North Central" State).

III. THE WAGES OF WOMEN IN ILLINOIS DEPARTMENT STORES

An exhaustive, but rather discursive study of women in the Illinois Department Stores in 1908 was presented in the Report of the Bureau of Labor Statistics for that year.¹ In Chicago, twenty-six stores reported, and in Other Cities twenty-two stores reported, making forty-eight stores in all. The wages paid in these stores, the conditions of work, and the home conditions of the workers are dealt with in thirty tables, only a few of which, however, bear directly on this wage study.

It is indeed unfortunate that the names, or at least the size of Other Cities is not given, else some interesting deductions might be made regarding the variation of women's wages with city size. Some indication of the variation from city to city may be secured, nevertheless. The

¹ Biennial Report of the Bureau of Labor Statistics, Illinois, 1908. Springfield, 1910. Pp. 413-592.

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“average weekly earnings when first employed”
were: ¹

	Total Employees	Earnings
Chicago.....	2,118	\$6.98
Other Cities.....	438	5.68

The variation in averages between Chicago and Other Cities is thus about twenty-five per cent. The range of wages among the various Chicago stores is very much greater, with a minimum of \$3.98 in a store employing one hundred and forty-nine women and a maximum of \$9.45 in a store employing seventy women. Among the stores in Other Cities the average weekly earnings when first employed range from \$3 in a store employing fifteen women to \$7.77 in a store employing thirty-four women. Thus, in Other Cities both the total average wage and the maximum and minimum average wages are slightly lower than in Chicago. The range of wages from store to store (more than 100 per cent. over the minimum) is equally great in Chicago and in Other Cities.

An idea of wages can be secured, however, only by a table of classified earnings,—hence a table for the women in the Department Stores at the present time: ²

¹ Supra, pp. 423-4.

² Supra, p. 435.

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Classified Weekly Earnings	Department Stores 1908		Factories 1906	
	Number Employed	Per cent. of Total	Number Employed	Per cent. of Total
Under \$5.....	117	5	351	15
\$5, but under \$6.....	146	6	301	13
6, " " 7.....	274	11	386	17
7, " " 8.....	267	10	332	15
8, " " 9.....	255	10	331	15
9, " " 10.....	207	8	179	8
10, " " 12.....	404	16	247	11
12, " " 15.....	390	15	105	5
15, " " 18.....	309	12	24	1
18, and over.....	177	7	2	*
Totals.....	2,556	100	2,258	100

One-fifth of the Illinois Department Store workers are paid less than \$7 a week; half receive less than \$10 a week. On the other hand, one-fifth receive more than \$15, and one-fourteenth more than \$18 as weekly wages. The employees are distributed over the wage scale from \$6 to \$18 per week with remarkable uniformity, only here and there showing any great variation.

In order to throw the wages of Department Store workers into their proper relation, they were paralleled by the wages of women working in Illinois factories. Though the Department Store wages are for 1908 and those of the factories are

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for 1906, the wages will bear comparison. While the numbers of women in each case (Stores 2,556, and Factories 2,258) are almost identical, the value of the comparison is greatly lessened because no indication is furnished of the character of the factory work under consideration and of the comparative age of the two groups of workers. For the women employed in Illinois Department Stores, therefore, the wages are apparently higher than the wages of the factory workers. The comparison is necessarily incomplete because of the lack of information regarding the sources of the factory data. The Department Store wages, however, by comparison with the wages of females in the industries of other States, are very high, while the wages of the Illinois Factory workers are similar to the wages of Factory workers in Massachusetts and New Jersey.

IV. THE INVESTIGATION OF TELEPHONE COMPANIES

No more effective wage material exists than that presented in the report of the investigation by the Secretary of the United States Department of Commerce and Labor, into the telephone companies of the United States. The statistical

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tables, while somewhat detailed, were compiled from pay-roll data furnished by telephone companies; hence they will provide material for a thorough-going comparison of wages,—(1) geographically; (2) by sex; and (3) for a representative industry.

There is considerable misunderstanding as to the wage variation between geographical areas. As a later chapter will be devoted to a thorough discussion of the factors involved in the problem, it is sufficient in the present connection merely to point out the extent to which geographic location influences wages in the telephone industry.

The material now under consideration furnishes an excellent basis for a study of geographic variation in wages. The character of the work performed by the telephone employees is practically identical in all cases; the general management (Bell Telephone Company) is the same; the cities, with the exception of New York, are all fairly comparable in size; so that the investigation lends itself peculiarly to an accurate comparison of the wages paid for given employments in widely separated places. The comparison is, moreover, between twenty-six cities, distributed as nearly as may be over the various geographical areas of

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the United States. The cities, classified according to geographic location, together with the numbers of operators employed and the average monthly wages, appear in the following table:

AVERAGE MONTHLY RATE OF WAGES OF TELEPHONE OPERATORS¹

City	Number of Operators	Average Monthly Rate of Wages
<i>North Atlantic</i>		
Philadelphia, Pa.....	750	\$29.16
Pittsburg, Pa.	578	27.55
Baltimore, Md.....	346	27.70
Boston, Mass.	1,625	33.01
New York City, N. Y.....	2,825	36.96
<i>South Atlantic</i>		
Washington, D. C.....	285	27.09
Atlanta, Ga.....	139	24.78
Birmingham, Ala.....	73	24.01
Richmond, Va.....	57	25.53
<i>North Central</i>		
St. Louis, Mo.....	466	29.44
Indianapolis, Ind.....	180	25.04
Chicago, Ill.....	3,385	31.69
Cincinnati, Ohio.....	606	27.74
Cleveland, Ohio.....	322	25.59
Omaha, Nebr.	257	29.52

¹ "Investigation of Telephone Companies," Senate Document 380, Sixty-first Congress, Second Session. Washington, Government Printing Office, 1910. Page 94.

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AVERAGE MONTHLY RATE OF WAGES OF TELEPHONE OPERATORS—*Continued*

City	Number of Operators	Average Monthly Rate of Wages
<i>South Central</i>		
Covington, Ky.....	66	\$26.61
Louisville, Ky.....	119	23.31
Nashville, Tenn.	175	22.40
New Orleans, La.....	189	24.37
Dallas, Tex.....	235	27.32
<i>Western</i>		
Denver, Colo.....	339	33.48
Los Angeles, Cal.....	326	35.09
Portland, Oreg.....	275	34.74
San Francisco, Cal.....	509	35.84
Seattle, Wash.....	267	35.00
Salt Lake City, Utah.....	82	34.84

From this table it appears that, with the exception of New York (\$36.96), the range of average monthly wages is remarkably small. In the North Atlantic Division from \$27.55 (Pittsburg) to \$33.01 (Boston); in the South Atlantic Division from \$24.01 (Birmingham) to \$27.09 (Washington); in the North Central, \$25.04 (Indianapolis) to \$31.69 (Chicago); in the South Central from \$22.40 (Nashville) to \$27.32 (Dallas); and in the Western Division from \$33.48 (Denver) to \$35.84 (San Francisco). If the North Atlantic Division is compared with the North Central

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Division, and the South Atlantic with the South Central Division, the range in wages is negligible. Even the range between the lowest Southern city (Nashville, \$22.40) and the highest Northern city (New York, \$36.96) is no greater than might be expected when the size and cost of living in both cities are considered.

The comparison of a similar employment, in one industry, under one management, located in twenty-six cities in all parts of the United States, leads to the conclusion that, with the exception of the Western States, wages vary only slightly from one geographic division to another. Within the same geographical area the range of wages is almost as great as is the range between geographic divisions. In the Western States, while the range is less than in any division, the average wage is several dollars above the average in the other divisions.

Though the wages of "telephone operators" lend themselves, perhaps, better than any other group of average wages to geographic comparison, they are wages paid to women. It may possibly be urged that the wages of women vary less with location than the wages of men. In order to avoid the possibility of such criticism, a

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further analysis is presented of the classified monthly wages of certain groups of men, by geographical area.¹ These particular occupations were selected, first, because they were reported from most of the cities; second, because they are highly specialized, hence similar in the different sections of the country; and third, because the largest numbers of males were listed under these headings.²

CABLE SPLICERS

<i>North Atlantic</i>	\$45-50	50-60	60-70	70-80	80-90	90-100	100-125
Pittsburg.....	..	19	..	1	2	12	..
Boston.....	1	5	2	6	6	..	11
New York.....	..	131	20	7	16	17	46
<i>South Atlantic</i>							
Atlanta.....	..	..	1	..	1	..	..
Birmingham...	..	..	..	..	1	..	..
<i>North Central</i>							
St. Louis.....	..	9	4	4	..	..	2
Chicago.....	1	23	21	14	16	13	10
Cincinnati.....	..	1	1	2	..	13	..
Cleveland.....	..	6	7	4	5	3	..
Omaha.....	..	3	..	1	2	2	..
<i>South Central</i>							
Louisville.....	..	6	..	3	1	6	..
Nashville.....	1	1	..	3	..	..	..
New Orleans...	1	3	1	8	1	..	..
Dallas.....	1	..	..	..	..	..	..
<i>Western</i>							
Denver.....	..	6	..	3	1	6	..
Los Angeles....	..	20	5	..	..	1	15
Portland, Oreg.	..	..	..	4	1	..	7
San Francisco..	..	11	16	5	24
Salt Lake City.	..	2	5	3	3

¹ Supra, pp. 123-258.

² Supra, pp. 180-242.

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LINEMEN

	\$35-40	40-45	45-50	50-60	60-70	70-80	80-90	90-100	100-125
<i>North Atlantic</i>									
Pittsburg.....	22	33	70	3
Boston.....	5	41	50	57	35	..	..
New York.....	16	70	83	..	..	..
<i>South Atlantic</i>									
Atlanta.....	1	2	1	..	..
Birmingham...	2	2	..	..	..
<i>North Central</i>									
St. Louis.....	1	2	3	36	1	..	..
Chicago.....	1	12	..	46	36	100	111	1	..
Cincinnati.....	7	3	26	20	12	29	..	..	..
Cleveland.....	5	2	20	..	..	..
Omaha.....	1	26	..	8	7	20	..	..	..
<i>Western</i>									
Denver.....	3	5	..	34	1	..	..
Los Angeles....	..	2	16	3	7	18	1	..	..
Portland, Oreg.	25	5	6	1	43	..
San Francisco..	21	6	3	2	22	10
Salt Lake City.	12	..	..	1	16	..

FOREMEN

	\$50-60	60-70	70-80	80-90	90-100	100-125	125 and over
<i>North Atlantic</i>							
Pittsburg.....	..	..	3	7	21	2	2
Boston.....	2	1	3	5	1	1	8
New York.....	1	..	5	15	27	30	26
<i>South Atlantic</i>							
Atlanta.....	..	..	..	..	1	..	..
Birmingham.....	..	..	..	..	1	..	..
<i>North Central</i>							
St. Louis.....	4	4	17	1	..
Chicago.....	1	6	5	25	38	33	4
Cincinnati.....	1	15	7	9	2
Cleveland.....	1	10	1
Omaha.....	..	2	1	1	2	3	2

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	\$50-60	60-70	70-80	80-90	90-100	100-125	125 and over
<i>South Central</i>							
Louisville.....	1	2	3	1	2
Nashville.....	..	..	3	2	..	..	..
New Orleans.....	1	..	3	..	10	2	..
Dallas.....	..	..	4	1	..	..	..
<i>Western</i>							
Denver.....	..	..	1	2	3	1	2
Los Angeles.....	..	..	1	..	1	34	1
Portland, Oreg....	..	3	3	..	..	12	2
San Francisco.....	..	1	..	1	8	47	3
Salt Lake City....	2	..	..	..	..	..	..

These tables are remarkably similar in geographic grouping. In the North Atlantic, South Atlantic and North Central divisions the wage distribution is very similar in all three occupations, while in the South Central Division it is slightly lower and in the Western Division slightly higher than in the other three.

The conclusions reached from a study of the wages of female telephone operators are thus fully confirmed by a study of the wages of Cable Splicers, Linemen and Foremen,—all male employees. Both groups of statistics support the statement that wages are slightly lower in the South Central and slightly higher in the Western Division, and that the variation in wages from one geographical division to another is at most slight.

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Another phase of the geographic variation of wages appears in the figures which show the variations from small to large towns in the same geographic area. These variations are illustrated by a table giving the wages of operators only, for towns of different sizes served by the same companies.¹

	Missouri and Kansas Telephone Co.		Northwestern Telephone Co.	
	Number of Operators	Average Monthly Rate of Wages	Number of Operators	Average Monthly Rate of Wages
Towns under 5,000.....	346	\$18.21	52	\$23.71
Towns 5,000 and under 15,000...	212	19.92	149	25.17
Towns 15,000 and under 25,000..	119	22.98	24	22.63
Towns 25,000 and over.....	555	26.03	325	27.99

These figures apparently justify the presumption that wages vary in amount directly with population. While not considerable, the variations are somewhat greater than the variations between the cities of similar size in the same geographical area. Since similar variations occur between large cities similarly located, these figures are far from establishing a definite relation between city size and the amount of wages in a given industry. However, they create a strong presumption in favor of such a relation.

¹ Supra, p. 94.

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The data in this report does not permit of any deductions regarding the extent of variation between the wages of men and of women, as the great majority of the occupations connected with the telephone industry are performed by either men or women. In a few instances, however, both sexes are employed at the same occupation, and while it is impossible in any instance to state whether the work performed by both sexes was similar in quality and in quantity, the presumption is that it was approximately the same. In view of this presumption, the table on page 106 is most significant.

A study of this table shows that in every occupation under discussion the wages of women are much lower than those of men. Of the clerks, the most numerous group analyzed, two-thirds of the females receive wages between \$30 to \$50 per month, while the wages of four-fifths of the men in the same group are over \$50 per month. Similar contrasts appear in all of the occupations.

The third point for which this study affords material is the distribution of wages within an industry. Few statistics are available to show the numbers of employees in a given industry who are receiving specified amounts of wages, but the be-

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NUMBER AND PER CENT. OF EMPLOYEES OF EACH SEX RECEIVING EACH CLASSIFIED MONTHLY RATE OF WAGES IN SPECIFIED OCCUPATIONS¹

Occupation	Employees:		Employees Whose Monthly Rates of Wages were							
	Male	Female	Under \$30		\$30 and under \$50		\$50 and under \$80		\$80 and Over	
			Number	Female	Number	Female	Number	Female	Number	Female
Book-keepers.....	257	59	1	23	15	31	199	5	42	..
Clerks.....	2,651	1,871	73	316	474	1,304	1,430	232	674	9
Clerks, Chief.....	118	37	..	..	1	15	24	20	93	2
Collectors.....	491	45	8	30	83	13	270	2	130	..
Janitors.....	311	105	57	84	98	21	154	..	2	..
Messengers.....	380	37	330	37	50
Stenographers.....	57	377	1	5	12	123	34	230	10	19

¹ Supra, p. 88.

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lief is prevalent that there is "plenty of room at the top." This belief is rudely shaken by an analysis of wage grouping in the Telephone industry. As the telephone investigation included employments ranging from "messenger" to "superintendent," a summary of the industry should present a very fair picture of the distribution of wages in one great industry.¹

MONTHLY WAGE—MALES

	Under \$50	50-60	60-70	70-80	80-90	90-100	100-125	\$125 and Over
New York.....	397	485	617	647	349	330	257	225
Chicago.....	518	834	578	634	402	182	163	53
San Francisco.....	31	23	163	154	46	243	97	28
Bell System.....	2,591	2,760	2,943	2,950	1,357	1,313	902	510

The Telephone industry, let it be borne in mind, is a skilled industry throughout. The number of "laborers" employed is very small. The vast majority of the employees are "linemen," "cable splicers," "foremen," "clerks," "book-keepers," etc. Nevertheless, a study of this table shows that of all the males employed in this industry, on the entire Bell System, 19.9% received less than \$600 per year; 34.9% less than \$725 per year; 73.4% less than \$1,000 per year; and 96.1%

¹ Supra, pp. 180-242.

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less than \$1,500 per year, leaving 3.9% receiving over \$1,500 annually. Thus the vast majority of the employees of the Bell System receive wages of less than \$3 per day (\$1,000 per year), while almost the entire group of employees falls below \$5 per day (\$1,500 per year). An analysis of the separate figures for New York and Chicago shows them to be a shade above the figures for the entire system, while the wages in San Francisco are considerably above those for all the Bell companies.

The Federal Telephone investigation, therefore, shows that wages vary only slightly from one geographical location to another; that wages in the North Atlantic, South Atlantic and North Central divisions are very similar, a little lower in the South Central and a little higher in the Western Division; that in similar employments the wages of men are much higher than the wages of women; and that 96 per cent. of the male employees in a representative nation-wide industry receive less than \$1,500 a year.

V. THE BETHLEHEM STEEL WORKS INVESTIGATION

A sharply contested strike in February, 1910, led to a Senate resolution which furnished the

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basis for one of the most intensive modern wage studies. The resolution in question, directing the Secretary of Commerce and Labor to report on working conditions at the Bethlehem Steel Works, was followed by a searching investigation and the publication of a special report containing some excellent wage material. The varying length of the working day and the working week led the investigators to state all wages in terms of wages per hour. This method, although it does not furnish a basis for accurate data of yearly earnings, is best adapted to a consideration of these statistics, hence it will be followed in the tables appearing in the present discussion.

The data collected at South Bethlehem, consisting of a transcript of the pay-roll of 9,184 employees for January, 1910, is stated by wage groups and by occupations. Both series of figures are available for this study.

The wages classified by earnings per hour are more specific and satisfactory than those classified by employments. They are summarized on next page.

An analysis of the table may well be prefaced by the statement that, taking into consideration

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NUMBER AND PER CENT. OF EMPLOYEES OF THE
BETHLEHEM STEEL WORKS EARNING CLASSIFIED
AMOUNTS PER HOUR AND PER CENT. EARNING
EACH CLASSIFIED AMOUNT OR LESS¹

Classified Earnings per Hour	Employees in Each Group	Per Cent. of Employees Earning Specified Amount per Hour or Less
4 and under 6 cents.....	<i>a</i> 97	<i>a</i> 1.1
6 " " 8 "	<i>a</i> 38	<i>a</i> 1.5
8 " " 10 "	<i>a</i> 100	<i>a</i> 2.6
10 " " 12 "	53	3.1
12 " " 14 "	2,640	31.9
14 " " 16 "	1,528	48.5
16 " " 18 "	1,162	61.2
18 " " 20 "	551	67.2
20 " " 22 "	677	74.5
22 " " 24 "	480	79.8
24 " " 26 "	581	86.1
26 " " 28 "	432	90.8
28 " " 30 "	93	91.8
30 " " 32 "	256	94.6
32 " " 34 "	146	96.2
34 " " 36 "	121	97.5
36 " " 38 "	52	98.1
38 " " 42 "	55	98.7
42 " " 46 "	36	99.1
46 " " 60 "	65	99.8
60 cents and over.....	21	100.0
Total.....	9,184	100.0

a Apprentices.

¹ Report on Strike at Bethlehem Steel Works. Charles P. Neill.
Govt. Printing Office, Washington, 1910. P. 60.

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the working hours at Bethlehem works, fourteen cents per hour is equivalent to about \$500 per year; eighteen cents to \$625 per year; twenty-two cents to \$750 per year; thirty cents to \$1,000 per year; and fifty-two cents to \$1,400 per year. The longest hours were found, on the whole, among the lowest paid workers, hence the ratio between hourly pay and annual earnings changes in the higher paid employments.

Applying these computations to the table of classified earnings, it appears that nearly one-third (31.9%) of the total number of employees were earning \$500 per year or less, while nearly two-thirds (61.2%) were earning \$625 per year or less. Of the remaining third (30% of the total) nearly all fall below an annual income of \$1,000, leaving only 8.2 per cent. of the total number of employees enjoying a yearly wage in excess of \$1,000. These facts are rendered still more significant when it is recollected that the steel industry is demanding a large share of highly skilled labor—an industry which is commonly believed to pay high wages.

A still more striking variation in wages paid appears in a consideration of the wages by departments.

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CLASSIFIED EARNINGS PER HOUR (IN CENTS) OF EMPLOYEES OF BETHLEHEM STEEL WORKS, BY DEPARTMENTS—JANUARY, 1910¹

Departments	12 and under 14	14 and under 16	16 and under 18	18 and under 20	20 and under 22	22 and under 24	24 and under 26
Electrical.....	13	13	11	32	13	6	9
Armor-plate.....	32	14	13	9	3	8	4
Machine Shop No. 2.	67	154	162	82	82	78	113
Mill—Puddling.....	13	19	16	3	13	11	9
Crucible.....	38	10	28	9	5	2	2
Blast Furnace.....	103	90	28	14	5	4	4
Steel Foundry.....	202	56	84	14	25	27	55
Erecting.....	338	123	12	1	11	2	4
Yard Stocking	268	71	50	20	24	9	..

These nine employments have been selected and arranged to show the diminution of high-paid, and the increase of low-paid employees from department to department. The Electrical Department is comparatively skilled, including among its 110 employees only 38 under eighteen cents per hour. The Armor Plate and Machine Shop departments show a higher percentage of low-paid men,—a percentage which is constantly increased, until in the Yard Stocking department only 39, or 9 per cent., of the 444 employees are receiving more than 18 cents per hour.

The restricted scope of the South Bethlehem investigation renders unsafe any general conclusions from it, but for this one plant, and by

¹ Supra, pp. 58–59.

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inference for the steel mills of Eastern Pennsylvania, the high-paid man (earning \$1,000 on full time) constitutes less than one-tenth of the entire working force, while in the same industry more than half of all the employees receive less than \$625 per year. Within the plant, the wage variation from department to department is considerable. In one department the proportion of workers receiving more than 18 cents per hour (\$625 per year) is one-third, while in another department the proportion is nine-tenths.

VI. SOME DEDUCTIONS

The two special reports on the wages of females' lead to the conclusion that, in the first place, the semi-skilled female in the Factory or Telephone industry of Wisconsin receives an average wage of \$1.10 a day (\$335 a year) if work is continuous; that, in the second place, the women employed in the Illinois department stores are paid wages considerably in excess of this figure; that, finally, the wages of factory workers in Illinois, while considerably less than the wages of the department-store workers, correspond very closely with the wages of the Wisconsin factory workers. Hence it may be fairly concluded that, for two States in

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the North Central group and by inference for neighboring States, the semi-skilled female who is continuously employed earns less than \$350 annually. From the Illinois report, the student must conclude that department-store wages, when compared with factory wages, are relatively high.

The intensive telephone investigation made by the Federal Government gives a clear picture of wages in one great skilled industry. The wages of telephone operators (females) under one management vary slightly from city to city. These wages are noticeably lower in the South Central and noticeably higher in the Western cities, yet the variation from one geographic area to another is little greater than the variation from city to city within the same geographic area. Tables of wages for various male employments confirm the above deductions, which are based on the wages of females. Two companies which served both large and small cities, reported a marked variation in the wages of operators with city size. Whether this variation is due to the varying character of the work in large and small towns, or to the lower wage standards of small towns, is not clear from the figures.

The most marked variation in the telephone

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wages is the variation by sex. Even in employments which are apparently similar, the wages of females are lower than the wages of males. This showing is particularly noticeable in the figures for the entire industry.

The telephone employees are, on the whole, highly paid,—one-fifth of the men receiving more than \$1,000 per year, while the remainder of the employees, both male and female, are distributed over the upper wage groups.

The report on the wages at South Bethlehem, giving a transcript of the pay-rolls of a great steel plant for one month, shows that nine-tenths of all of the employees received less than \$1,000 annually. The wage variation from department to department was particularly marked. In one instance, nine-tenths of the department employees received less than \$625 per year.

Therefore, for females, for one national skilled industry, and for an individual steel plant, the special wage reports furnish wage statistics which, when compared with wage data from the other available sources, should permit of far-reaching conclusions.

CHAPTER VII

THE STATISTICS OF AVERAGE WAGES

I. THE SIGNIFICANCE OF A WAGE AVERAGE

As was noted in a previous chapter, State wage statistics are usually presented in the form of averages—only in the exceptional case are classified earnings published. To be sure, some of the labor bureaus content themselves with a bare statement of minimum and maximum wages, but such cases are, fortunately, rare. Since many of the wage reports deal with average wages only, and then in a thoroughly reprehensible manner, it would not be amiss to ask at the outset what an average wage really is and what importance may be attached to it.

Webster's New International Dictionary states that an average is "Any medial estimate or generalization derived from a comparison of diverse specific cases." This thought may be more clearly brought out by an illustration. Two groups of men are working,—ten carpenters at

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\$3 per day and twenty laborers at \$1.50 per day. The Bureau of Labor writes to the employer, requesting a statement of average wages. The employer adds \$3 and \$1.50, divides by 2 and sends his reply—"Average wages, \$2.25." The employer has compared two diverse cases, and reached an estimate based on the comparison.

If the carpenter helped the laborer to pay his landlord and grocer, an average would be a much fairer statement of wages. Nothing of the kind occurs, however, since the laborer must meet all bills with his \$1.50, while the carpenter, to meet like bills, has \$3. Thinking of an "average" wage of \$2.25, you say, "Yes, they are fairly well off." "They" meaning nobody, your statement is absurd unless you know that, in reality, the carpenters are comparatively well off; the laborers, comparatively badly off. The average in this case merely misleads, since neither the carpenter nor the laborer is receiving \$2.25. The average wage is an abstract concept, mathematically correct, but socially misleading. A statement that the average wage in the building trades is \$2.25 a day leads at once to the conclusion that building trade employees can provide for themselves a certain quantity of coal, potatoes, woollen cloth-

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ing and the other necessities of life. In other words, men inevitably think of wages in terms of purchasing power, yet this \$2.25 wage does not represent the purchasing power of any one individual. The average wage therefore represents neither purchasing power nor the wage actually paid, but a wage falling somewhere between actual wages. When you hear, therefore, that average annual wages in a State are \$500, you may know that some workers are receiving more than \$500 and some less than \$500, but that no one laborer is necessarily receiving \$500.

Nevertheless, as the State labor bureaus furnish average wages, a desire to learn what wages really are must lead to such utilization of these averages as is scientifically possible. Fortunately, some use of the averages is permissible. For example, if all of the States compile their wages in a similar manner, the resulting averages are certainly comparable, though they may not accurately represent the actual amount of wages paid. If, in addition, a State gives both average and classified earnings (*e. g.* Massachusetts and New Jersey), and if the averages in Pennsylvania correspond closely with the averages for New Jersey, it may fairly be inferred that absolute wages in

THE STATISTICS OF AVERAGE WAGES

the two States are similar. That, in fact, is the conclusion which may ultimately be reached.

But all wage averages are not useless. To be sure, if the total amount paid in wages in the State of Illinois be divided by the total number of wage earners, the resulting average is meaningless. On the other hand, average wages for the Bituminous Coal Mining industry would be fairly worthy of attention, because in this industry the vast majority of employees do approximately the same kind of work and earn about the same wages. Carrying the illustration one step further, the average wage of the brakemen on a certain division, or of the carpenters on a certain operation, would be a very real picture of actual conditions, because the wages would be practically the same for all of the men in so narrow an employment. An average wage for an entire State, except for comparison with a State having similar industries, is valueless; an average for a great industry may be used for comparison with similar industries, although when standing alone it means very little; while an average for one employment within a given industry may be very valuable.

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II. METHODS FOR COMPUTING AVERAGE WAGES

An average may be either a simple mathematical average, or a weighted average. The simple average, by far the least satisfactory, is secured by adding the rates of wages and dividing by the number of different groups of wage earners. Thus,—

10 Carpenters.....	\$3.00 per day
20 Laborers.....	1.50 “ “
<hr/>	
Total.....	\$4.50
Average.....	2.25

The greatest opportunity for error exists in such a computation, because there are many more laborers than there are carpenters. Hence it is not fair to consider the rates of wages alone, unless the same numbers of both trades are employed. This objection has led to the extensive use in wage reports of the “weighted average,” which depends upon the numbers employed as well as upon the wage rate, thus,—

10 Carpenters at \$3.00.....	\$30.00
20 Laborers at 1.50.....	30.00
<hr/>	
30 Workers—Total.....	\$60.00
Weighted average.....	2.00

THE STATISTICS OF AVERAGE WAGES

The adoption of the weighted average in this case reduces "average wages" from \$2.25 to \$2.00. It is undoubtedly the most reliable form of average, and is most generally employed.

The "average wage," no matter how computed, must be used with great care. Yet, in view of the paucity of classified wage statistics and the prevalence of average wage statistics, an attempt must be made to utilize the average statistics available. Since these exist primarily in the reports of the State labor bureaus, although the Federal Government has issued several average wage studies which will also be utilized, the next few pages will be devoted to an analysis of those State reports which publish average wages.

III. MICHIGAN, NEW HAMPSHIRE AND RHODE ISLAND

The wage statistics of Michigan, New Hampshire and Rhode Island will be commented on, but not studied. The average wages for Michigan include the entire State, together with certain leading cities. Although they are very general, and have been mentioned in another connection, they will be briefly reviewed here.

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AVERAGE DAILY WAGES IN MICHIGAN—1909

BY GROUPS OF EMPLOYMENTS¹

Employments	Entire State		Detroit		Grand Rapids	
	Number	Average Daily Wage	Number	Average Daily Wage	Number	Average Daily Wage
Superintendents.....	9,194	\$5.07	....	....	....	....
Foremen.....	9,213	3.31	....	....	....	....
Male Office Employees	9,862	2.10	....	....	....	....
Female “ “	6,619	1.57	....	....	....	....
Male Factory Workers	209,967	2.06	78,402	\$2.28	18,132	\$2.08
Female “ “	42,739	1.14	22,318	1.27	3,786	1.16
Boys under 16.....	2,746	.88	1,493	.91	213	.80
Girls under 16.....	1,407	.71	1,014	.73	109	.60
Total.....	291,799	\$1.98	103,287	\$2.02	22,238	\$1.90

It will be seen from this table that the average daily wage of the adult male industrial worker in Michigan is \$2.06; that of the adult female is \$1.14; while the wages of boys and girls under sixteen years are 88 and 71 cents respectively. In the two largest cities of the State wages are, if anything, slightly below the wages of the entire State. The variation may be due to the varying character of the industries in the State at large and in the great cities, or it may be that lower wages are paid in the cities than in the country district. The statistics are at best inconclusive on this point.

¹ Annual Report of the Department of Labor, 1910. Lansing, 1910. Pp. 188-191.

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A somewhat greater detail appears in the average wage statistics of New Hampshire. The figures are stated in the form of earnings per week; but, as no statistics of unemployment are given, the only method of computing yearly earnings is to multiply the weekly earnings by 50, thus allowing for an unemployment of 4 per cent.—a very low estimate, as is shown by unemployment in Massachusetts and New Jersey.

The wage statistics of New Hampshire are given for adult males, for adult females and for children under 16 years. Classified by the average weekly wage, the eighteen New Hampshire industries employing more than 500 males are shown in the statement on the next page.

A study of this table shows that, of the three industries employing the largest numbers, all fall below an average wage of \$650, though the fourth largest industry heads the list with an average wage of \$838.50. Eight of the eighteen industries show average wages of \$650 or under; sixteen show average wages of \$750 or under, while two of the eighteen show averages above \$800.

On the other hand, a study of the women at work in New Hampshire shows average wages far below those paid to the men. The numbers of

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AVERAGE EARNINGS IN THE INDUSTRIES EMPLOYING MORE THAN 500 ADULT MALES. NEW HAMPSHIRE, 1908¹

Industries	Total Adult Males Employed	Average Yearly Earnings (Computed)
Paper and Pulp.....	3,964	\$838.50
Granite.....	1,611	805.50
Locomotives, Cars, Etc.....	2,101	750.50
Castings.....	647	735.50
Building and Construction.....	1,011	729.50
Electricity and Gas.....	560	729.50
Woollens.....	1,966	725.00
Hosiery.....	1,002	694.00
Dress Goods.....	507	671.00
Machines.....	1,477	665.50
Brick.....	529	650.00
Lumber.....	7,355	637.00
Boots and Shoes.....	9,159	634.00
Bobbins.....	593	590.50
Boxes (wooden).....	1,467	566.50
Cotton Cloth.....	13,825	554.00
Furniture.....	947	549.50
Printing and Publishing.....	506	535.50

women employed in New Hampshire are comparatively small, hence only six industries show more than 500 adult females. The annual earnings are computed from the weekly earnings by the same method that was employed in the case of the men,²—

¹ Biennial Report, New Hampshire Bureau of Labor, 1909-10. Published 1910. Pp. 17-53.

² *Supra*, pp. 17-53.

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Industries	Numbers of Adult Females Employed	Average Yearly Earnings (Computed)
Boots and Shoes.....	4,093	\$457.00
Underwear.....	522	451.00
Clothing.....	572	443.50
Woollens.....	927	426.00
Cotton Cloth.....	12,154	407.50
Hosiery.....	1,493	407.00

Thus, in the six New Hampshire industries employing the greatest numbers of females, the range in average wages is very slight,—from \$407 to \$457 annually. Comparing this table with that containing the average wages of males, it appears that the wages of males range nearly \$200 per year, or 50 per cent. higher than the average weekly wage of females.

The number of minors employed in New Hampshire is very small, exceeding 63 in only two industries—Boots and Shoes and Cotton Cloth—in which the average weekly wages of minors are respectively \$5.27 and \$4.83.

The Rhode Island authorities present, for a select group of industries, a statement of weekly wages, which amount, virtually, to averages.

The figures are given, for example, for “cotton goods—all wage earners,” as between \$7 and \$8 per week. There is no indication of the method

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employed in securing the resultant, hence the figures would be accepted with considerable hesitancy were it not for the similarity between them and the average wage statistics of other States. In the entire State of Rhode Island the average yearly earnings of all wage earners (4 per cent. deducted for unemployment) would be from \$450 to \$500; for adult males, \$500 to \$550; for adult females, \$350 to \$400; and for children under 16, \$150 to \$200.¹ Thus the average wages in Rhode Island are very similar to those in New Hampshire and Massachusetts. As the Massachusetts figures, which are far more reliable than those from Rhode Island, will be carefully analyzed in a later section, no attempt will be made at this point to draw further conclusions from the Rhode Island statistics.

IV. PENNSYLVANIA

The Pennsylvania Bureau of Industrial Statistics, which publishes average wages only, reports that in the mines and factories of Pennsylvania in 1909 there were, exclusive of "office help," 679,926 adult males, whose average annual earn-

¹ Annual Report Commissioner of Industrial Statistics, Rhode Island, 1908. Providence, 1909. Pp. 516-17.

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ings were \$550; 89,699 adult females with annual earnings of \$300; and 22,394 minors (under 16 years of age) with annual earnings of \$190.¹

The Pennsylvania figures present a much more accurate analysis than those of Michigan or New Hampshire, as they are stated by industries as well as by age and sex. In order to make this analysis effective, the figures will be separated on a basis of age and sex, and a showing made of the wages of (1) men, (2) women, and (3) minors (under 16).

The wages of men in Pennsylvania vary considerably from industry to industry, as is shown by the following statement of the ten industries employing the largest numbers of adult males.¹

Industry	Adult Males Employed	Average Yearly Earnings	Average Daily Earnings
Bituminous Coal Mining.....	171,987	\$525.79	\$2.01
Anthracite Coal Mining.....	166,227	503.85	2.36
Iron and Steel Rolling.....	114,803	646.98	2.22
Pig Iron.....	14,904	587.65	1.96
Glass—Bottles and Table Ware .	11,419	512.98	2.11
Cars—Wheels and Castings.....	10,899	585.86	1.99
Cement.....	9,420	498.03	1.63
Iron and Steel Ingots and Castings	9,074	623.73	2.15
Tin Plate.....	8,914	716.11	2.91
Locomotives.....	8,360	690.63	2.26

¹ Annual Report Sec'y Internal Affairs, Part III, Industrial Statistics, 1909. Harrisburg, 1910. Pp. 381-85.

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“Office help” has been omitted, and “wage earners” alone considered, so that comparisons with other States might be made. The two great industries of Pennsylvania, mining and steel making, show average wages varying considerably, yet nowhere falling below \$500, nor rising above \$650. At the same time, the range in the daily wage is even less,—from \$1.96 to \$2.36, while the industry with the lowest yearly earnings shows the highest daily earnings. The variation between annual and daily earnings is of course due to unemployment in the mines and Sunday work in the steel mills. The real wage is however the product of the daily wage times the number of days worked, hence the yearly and not the daily wage is the real criterion in Pennsylvania statistics.

Turning now to the wages of adult females in Pennsylvania, it appears that the average sinks far below that of the men. The ten industries (exclusive of Philadelphia textiles) employing the greatest number of females, in order of the number employed, are,¹ —

¹ Annual Report Sec’y Internal Affairs, Part III, Industrial Statistics, 1909. Harrisburg, 1910. Pp. 381-85.

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Industry	Adult Females Employed	Average Yearly Earnings	Average Daily Earnings
Silk—Thrown (Dress Goods)...	11,651	\$290.09	\$0.96
Hosiery.....	11,032	250.89	.88
Silk—Thrown.....	5,577	200.08	.69
Knit Goods—Underwear.....	4,239	254.00	.90
Woollen and Worsted.....	3,683	291.00	1.03
Shoes.....	2,868	309.24	1.06
Silk Dress Goods.....	2,528	357.35	1.75
Hats and Caps.....	1,921	340.59	1.16
Glass—Bottles and Table Ware.	1,877	231.59	.95
Cotton Goods.....	1,870	305.23	.99

The average wage of these adult females is extremely low, in no case exceeding \$400, and in six of the ten cases falling below \$300. That this low wage is not due to unemployment is shown by the very low average daily wages. That these Pennsylvania figures are probably accurate is shown by a comparison with the wages of adult female factory workers in Wisconsin.¹ In the general industries of the State, requiring semi-skilled work, the wages averaged slightly more than one dollar a day, an average which is maintained in Pennsylvania if the statistics of the Philadelphia textile factories are included. The average wages of adult females in Wisconsin (\$1.10 per day) are

¹ See Chapter VI, Special Wage Reports, Section II.

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therefore strikingly similar to the average wages of adult females in Pennsylvania.

The comparatively large number of minors employed in the manufacturing industries of Pennsylvania renders an analysis of their wages most interesting. The following ten industries (exclusive of Philadelphia textiles) employed the largest numbers of minors.¹ —

Industries	Minors Employed	Average Yearly Earnings	Average Daily Earnings
Anthracite Mining.....	3,109	\$194.75	\$0.91
Silk—Thrown (Dress Goods)....	2,231	155.18	.52
Silk—Thrown.....	1,976	142.66	.49
Hosiery.....	1,837	180.44	.63
Glass—Bottles and Table Ware.	1,694	187.38	.78
Bituminous Mining.....	1,016	246.86	.94
Woollen and Worsted.....	792	194.22	.69
Iron and Steel Rolling.....	657	255.11	.88
Shoes.....	507	172.19	.59
Silk (Dress Goods).....	467	187.79	.62

Two of the ten Pennsylvania industries employing the largest numbers of minors, therefore, pay average wages of more than \$200 annually. The other industries fall as low as \$143.

Unsatisfactory as are the Pennsylvania average wage statistics, because of their exclusion from

¹ Ann. Rep. Sec'y Internal Affairs, 1909, Part III, Industrial Statistics. Harrisburg, 1910. Pp. 381-385.

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the general tables of the Philadelphia textile industries, and incomplete as they may doubtless be, in their failure to include many persons gainfully employed, they are, nevertheless, very fair average wages, since they give a general idea of the wage situation, by age and sex, not only in the State at large, but in specific industries as well.

V. AVERAGE WAGES IN MASSACHUSETTS

From the average wage statistics published by Massachusetts it appears that there are in that State 480,134 wage earners (323,308 males and 156,826 females), employed in 6,044 establishments, and receiving an average yearly wage of \$510.71.¹ No separate average wages are given for males, females and minors, but the total average annual earnings are presented by industries, by cities, by towns, and by counties.

As the average wages of Massachusetts are similar to the averages cited from other States, but one deduction from them will be made at this point. Average annual earnings seem to vary immensely with the proportion of women em-

¹ Statistics of Manufactures for the Year 1908. Public Document No. 36. Boston, 1909. P. 2.

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ployed in any industry; hence the wages of women must be generally lower than the wages of men.

The proportion of men and women in the industries of the State at large is 2 of men to 1 of women, with an average wage of \$510.71. The following industries, dominated by women, report wages considerably under this average.¹

The figures in parentheses under each number of employees represent the approximate relation which each pair (male or female) of figures bears to one another.

	Males	Females	Average Annual Earnings
Boxes—Fancy and Paper.....	901 (1)	2,014 (2)	\$393.92
Brooms and Brushes.....	620 (2)	945 (3)	343.48
Confectionery.....	1,342 (2)	3,444 (5)	328.97
Hosiery and Knit Goods.....	2,559 (2)	6,581 (5)	399.89
Shirts.....	279 (1)	1,294 (5)	378.25

While there is, in these industries, a varying degree of skill, they are approximately equal in average earnings,—all under \$400; and they are all dominated by women.

¹ Supra, pp. 2-9.

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Sharply contrasted with these averages, are the earnings in the industries dominated by men.¹

	Males	Females	Average Annual Earnings
Electrical Machinery.....	8,631 (9)	1,907 (2)	\$558.40
Foundry and Machine Shop...	30,661 (65)	451 (1)	601.03
Jewelry	4,268 (2)	2,423 (1)	591.65
Printing and Publishing.....	2,148 (2)	1,265 (1)	617.01
Tobacco, Cigars and Cigarettes	2,263 (5)	912 (2)	739.45

Here again there is variation in skill and in trade-union strength; nevertheless, the man-dominated industries pay wages considerably above the wages paid in industries which are dominated by women.

As to the variation in wages from large to small cities, the Massachusetts figures will be discussed in greater detail, in a later chapter.² At this point it need only be remarked that the variation from large to small centres of population is irregular, and does not follow population size.

¹ Supra, pp. 2-9.

² See Chapter VIII, Geographical Distribution of Wages, Section III.

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While the average wage statistics of Massachusetts "are in all cases theoretical," obtained "by dividing the total amount paid in wages during the year by the average number of persons employed,"¹ they nevertheless admit of comparison between industry and industry and between industries in different cities. This comparison clearly shows the inverse ratio between the proportion of women and the rate of wages in an industry.

VI. NEW JERSEY AVERAGE WAGE STATISTICS

The average wage statistics of New Jersey, like those of Massachusetts, refer to all employees, irrespective of age and sex. In the 2,127 establishments of New Jersey, 278,964 persons were employed at an average annual wage of \$500.14.² This average wage is thus slightly lower than that for all of the industries of Massachusetts (\$510.71).

The New Jersey industries present some marked differences from those of Massachusetts. In the first place, the industries of New Jersey are diversified so that with the exception of the Silk, Woollens and Machinery industries, no one in-

¹ Statistics of Manufacture for the Year 1908. Public Document No. 36. Boston, 1909. P. xxiv.

² Bureau of Statistics of New Jersey, 1909. Camden, 1910. Pp. 74-5.

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dustry employs more than 10,000 persons. This situation is essentially different from Massachusetts, where Cotton Goods and Boots and Shoes employ a quarter of all the persons engaged in Massachusetts industries. As in Massachusetts, the larger New Jersey industries show an average wage considerably under \$600.

A study of wages in specific New Jersey industries does not show average wages in these industries to be markedly at variance with those of Massachusetts. By way of comparison, the following industries are presented. They were the largest industries which were reported from both Massachusetts and New Jersey.

STATISTICS OF AVERAGE WAGES IN CERTAIN MASSACHUSETTS AND NEW JERSEY INDUSTRIES

Industries	Massachusetts (1908) ¹		New Jersey (1909) ²	
	Number Employed	Average Annual Earnings	Number Employed	Average Annual Earnings
Chemicals.....	1,047	\$588.65	7,042	\$521.03
Clothing.....	4,083	481.24	1,153	382.01
Cotton Goods.....	90,935	439.34	6,216	322.70
Electrical Goods.....	10,538	558.40	5,170	628.52
Foundry and Machine.....	31,112	601.03	7,350	534.59
Jewelry.....	6,691	591.65	3,163	601.71
Printing and Publishing.....	3,413	617.01	1,385	579.17
Rubber Goods.....	5,763	498.64	7,016	521.17
Shirts.....	1,573	378.25	3,157	366.81
Silk and Silk Goods.....	3,235	429.96	20,356	444.61

¹ Statistics of Manufactures, Massachusetts. Boston, 1909. Pp. 2-11.

² Bureau of Statistics of New Jersey, 1909. Camden, 1910. Pp. 74-5.

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While the average annual earnings of all Massachusetts industries differ very slightly from those of New Jersey, these ten industries show a considerably greater variation. Six of the ten industries report higher wages from Massachusetts than from New Jersey. Whether this variation is due to a varying type of industry or to actual differences in wages, the statistics do not show; but there is unquestionably some variation in classification, shown by a study of the two groups of statistics.

A similar comparison between the ten industries in each State employing the largest numbers of persons appears on the following page.

These industries are arranged according to the numbers employed. In both States the leading industry reports an average wage under \$450; in both the second industry falls between \$550 and \$600; but in the remaining ones, a very considerable difference appears. Still, there is but one industry in Massachusetts and but two in New Jersey reporting an average annual wage of more than \$600; while in seven Massachusetts industries and in four New Jersey industries, the average falls below \$500.

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AVERAGE ANNUAL EARNINGS IN THE TEN INDUSTRIES EMPLOYING THE LARGEST NUMBER OF PERSONS—MASSACHUSETTS AND NEW JERSEY

Massachusetts (1908) ¹			New Jersey (1909) ²		
Industries	Total Employed	Average Annual Earnings	Industries	Total Employed	Average Annual Earnings
Cotton Goods.....	90,935	\$439.34	Silk (broad and rib- bon).....	20,356	\$444.61
Boots and Shoes...	69,250	562.59	Machinery.....	16,882	598.81
Foundry and Ma- chine Shop.....	31,112	601.03	Woollen and Worsted Goods..	10,748	390.27
Worsted Goods....	26,878	444.35	Cigars and Tobacco	8,754	313.08
Woollen Goods....	15,091	455.49	Oils.....	8,151	617.21
Paper and Wood Pulp.....	11,390	489.02	Glass.....	7,635	620.36
Electrical Supplies.	10,538	558.40	Drawn Wire and Wire Cloth.....	7,582	407.06
Leather.....	9,227	537.46	Foundry, Iron.....	7,350	534.59
Hosiery and Knit Goods.....	9,140	399.89	Chemical Products.....	7,042	521.03
Dyeing and Finish- ing Textiles.....	7,069	467.18	Rubber Goods....	7,016	521.17

In Massachusetts there were 59 industries and in New Jersey 61 industries employing more than 1,000 persons. A comparison of the two groups yields interesting results.

The numbers of industries are in both States remarkably similar and in both cases the distribution is quite uniform. Massachusetts is again slightly higher than New Jersey, though the discrepancy is not of serious extent.

¹ Statistics of Manufactures, Massachusetts. Boston, 1909. Pp. 2-11.

² Bureau of Statistics of New Jersey, 1909. Camden, 1910. Pp. 74-5.

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AVERAGE WAGES IN THE MASSACHUSETTS AND NEW JERSEY INDUSTRIES EMPLOYING MORE THAN 1000 PERSONS

Average Wage	Massachusetts ¹ 1908		New Jersey ² 1909	
	Number of Industries	Per cent.	Number of Industries	Per cent.
Under \$450	15	25	23	37
\$450-\$500	13	22	6	10
500- 550	6	10	7	12
550- 600	11	18	11	18
600- 650	6	10	10	16
650- 700	2	4	1	2
700- 750	4	7	2	3
Over 750	2	4	1	2
Totals	59	100	61	100

VII. FEDERAL STATISTICS OF AVERAGE WAGES

The last bulletin of the Federal Bureau of Labor relating to wages was published in 1908, and gives the wages for 1907. In one sense the figures presented from time to time in the Bulletin are thoroughly representative, as they are collected, for like industries, from every part of the United States. On the other hand, the number of establishments furnishing the statistics is small, there is no way to tell whether they are union or non-union establishments, and the statistics are furnished by the employer. Therefore, if any

¹ Statistics of Manufactures, Massachusetts. Boston, 1909. Pp. 2-11.

² Bureau of Statistics of New Jersey, 1909. Camden, 1910. Pp. 74-5.

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presumption exists as to the faultiness of the statistics, they should be read down, rather than up, for they come from a source which is most interested in making wages appear high.

Specimen material from this Bulletin has already been given. The material as a whole permits of practically no deductions, save that wages are considerably higher in the West than in any other section of the country, and that the wages in some trades are very much higher than in others.

“Laborers” are more frequently specified than any other single occupation. The following table of hours and wages of “laborers” will therefore give a relative idea of the range of one group of wages from section to section and from industry to industry.

As a means of comparison the wage statistics of the Bulletin are fairly valuable, but as a statement from which any knowledge may be derived of the annual earnings of any group of men or of any section of the country, the figures are wholly worthless.

The only other average wage figures recently printed by the Federal Government are those contained in the Lodge Report on Wages and

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AVERAGE WAGES PER HOUR AND HOURS PER WEEK OF "LABORERS"¹

Industries	North Atlantic States		South Atlantic States		North Central States		South Central States		Western States	
	Hours	Wages (cts.p.hr.)	Hours	Wages (cts.p.hr.)	Hours	Wages (cts.p.hr.)	Hours	Wages (cts.p.hr.)	Hours	Wages (cts.p.hr.)
Building Trades.....	54	20	54	16	56	22	55	17	49	29
Cars, Steam Railroad.....	57	15	56	14	58	16	60	15	54	18
Flour.....	60	18	67	11	60	18	67	13	65	24
Foundry and Machine Shop.....	56	17	55	15	56	18	57	16	55	25
Gas.....	61	18	62	15	61	18	61	15	58	24
Glass.....	59	15	59	14	60	17	..	..	..	..
Lumber.....	60	18	60	14	60	18	61	16	60	22
Marble and Stone.....	51	25	55	17	57	21	58	15	49	32
Paper and Wood Pulp.....	59	16	..	..	61	15	..	..	..	..
Planing Mills.....	58	17	58	13	59	16	60	16	57	24
Ship Building.....	56	18	57	14	59	18	54	23

¹ Bulletin 77, U. S. Bureau of Labor, July, 1908. Pp. 25-60.

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Prices of Commodities.¹ Unfortunately these statistics are not only fragmentary in form but most incomplete in their presentation. Wages per hour without hours per day; average wages with no statement as to the numbers of wage earners coming under the investigation; wages collected by local labor bureaus (New Jersey and Wisconsin); and wages furnished "by correspondence" and by secretaries of employers' associations, constitute the statistical material for the report. Such statistics cannot of course pretend to be scientific, and were any deductions to be made from them they would not be, in any real sense, worthy of credence. The only point which these statistics really establish is the variation in wage rates from one section of the country to another.²

The average wages collected and published by the Federal Government in recent years admit of no important conclusions which are not most general in character, and already rather fully established.

¹ Report of the Select Committee on Wages and Prices of Commodities. Senate Report No. 912, 61st Congress, 2nd Session.

² For a fuller discussion of these statistics, see Chapter VIII, "The Variation of Wages with Geographic Location." Section II.

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VIII. COMPARATIVE AVERAGE WAGES

Owing to the varying methods of compilation, no accurate comparison of average wages can be made. Some of the States publish average earnings for all employees, while the statistics furnished by others are for employees classified by sex. As neither method is generally used, both groups of statistics will be set down in the following table, which, though inconclusive, is none the less interesting.—

AVERAGE WAGES IN VARIOUS STATES IN TERMS OF
YEARLY EARNINGS

States	Average in All Industries and for All Employees	Average of Adult Males All Industries	Average of Adult Females All Industries	Average of Minors All Industries
Michigan ¹	\$603.90	\$628.30	\$347.70	\$250.00
Wisconsin ²	555.00	597.80	301.95	....
New Hampshire ³....	....	656.24	397.28	241.24
Rhode Island ⁴	494.00	546.00	390.00	182.00
Massachusetts ⁵	510.71	....	....	....
New Jersey ⁶	500.14	....	....	....
Pennsylvania ⁷.....	....	550.00	299.00	190.00

¹ Annual Report, Dept. of Labor, 1910. Lansing, 1910. Pp. 188-191.

² Bureau of Labor Statistics, Wisconsin, 1907-8. Madison, 1909. P. 466.

³ Biennial Report, Bureau of Labor, 1909-10. Pp. 17-54.

⁴ Annual Report Commissioner of Industrial Statistics, 1908. Providence, 1909. Pp. 516-17.

⁵ Statistics of Manufacture, 1908. Boston, 1909. P. 2.

⁶ Bureau of Statistics of New Jersey, 1909. Camden, 1910. Pp. 74-5.

⁷ Annual Report Secretary of Internal Affairs, Part III, Industrial Statistics, 1909. Harrisburg, 1910. P. 385.

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Five of the seven States, therefore, publish data of earnings for all employees. In the three of these five States having similar industries, the averages are markedly similar,—varying only by seventeen dollars. In the other two States, with non-textile, man-dominated industries, the average is considerably higher. The variation in the wages of men and of women in the five States publishing such figures, is considerable, particularly in the wages of men in New Hampshire; while the wages of women are particularly high in New Hampshire and Rhode Island. Among the children the variation is less than that among men and women, but greater than the variation among all employees.

Such are the comparable statistics of average wages. Although incomplete and, in a measure, inaccurate, they show that the classified wage statistics for Massachusetts and New Jersey doubtless have a counterpart in the wages of other States supporting like industries, since the average wages for all of the States from which reliable averages can be obtained, are very similar to the averages for these two States.

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IX. THE STATISTICS OF AVERAGE WAGES

Three important points are established by this study of average wages,—first the amount of average wages, second the variation in average wages by locality and sex, and third the similarity between the average wages in the States which do publish, and in the States which do not publish statistics of classified earnings. Each of these points is sufficiently important to warrant a brief summary comment.

Average wages in all industries and for all employees, range from \$500 to \$600. Where only men are employed, the average for an industry rises considerably, occasionally reaching \$750 or even \$800. The employment of a large number of women, on the other hand, means a lowering of the average, often below \$400. The great industries, *i.e.* those which employ the largest numbers of persons—such, for example, as Coal Mining, Steel Making, Textile Work, and the like—pay almost without exception average wages of less than \$600 to the adult males employed. The average wage of the adult male wage worker in the leading American industries is seldom less than \$450 and seldom more than \$600 per year.

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In short, the range is from an average daily wage for the year of \$1.50 to \$2.

As to the second point, the variation in average wages, it appears that average wages are rather constant for a given industry from State to State, and from city to city within a State. In different words, the variation in wage averages, within a given industry, is no greater from State to State, than it is from city to city within the same State. But there is, on the other hand, a marked variation in wages from industry to industry,—a variation, as a study of the wage figures clearly demonstrated, which occurs inversely with the proportion of females employed in the industries.

Third, the statistics cited in this chapter indicate that average wages are about the same in New Hampshire, Michigan, Rhode Island, Pennsylvania, Massachusetts and New Jersey. If this statement be accepted, it is fair to infer that the deductions based on the classified wage statistics of Massachusetts and New Jersey are probably correct, with slight modifications, for New Hampshire, Michigan, Rhode Island and Pennsylvania. In short, this study of average wages broadens the statistical basis on which wage inferences for

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the entire industrial region of the United States may be made, by demonstrating the probable similarity between wages in six leading industrial States.

CHAPTER VIII

THE VARIATION OF WAGES WITH GEOGRAPHIC LOCATION

I. THE THEORY OF GEOGRAPHIC VARIATION

The assertion that wages vary widely from section to section of the United States is commonly accepted and is frequently made an axiom of wage theories. In pursuance of this theory, wages in the South are much lower, and wages in the West much higher than wages in any other part of the United States, yet a careful analysis of wage statistics shows that, generally speaking, neither of these assumptions is wholly correct, because there is no great wage variation from one section of the United States to another. Wages are not markedly lower in the South than in the North, though in the far West they appear to be somewhat higher than in the eastern parts of the country.

Most of the evidence adduced in the discussion of the Federal Telephone Investigation, showed

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very conclusively that the variation from one city to another, in highly specialized occupations, was comparatively slight. As this particular bit of evidence has already been analyzed in considerable detail, little further reference to it will be made in this chapter, which includes the additional material bearing on the subject of geographic variation of wages.

The Telephone Investigation deals with wages in varying geographic localities. Another phase of the same wage problem appears in the discussion over relative wages in city and town. The belief is commonly held that wages are higher in urban than in rural districts. If that be true, then there is a distinct compensation for the higher city prices of certain commodities.

The statistics on which this investigation is based indicate that the wage variation from city to town within the same geographic area is comparatively slight. In fact, the variation in wage for similar occupations from industry to industry, is probably greater than the variation with geographic location.

The statistics of classified earnings, published by some of the States, do not permit of any deductions relative to the geographic variation of

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wages. Average wages alone, either for an industry, or for a given employment, afford opportunity for satisfactory comparisons. The objections already noted, to the dependability of average wages, do not apply with equal force to a comparison of averages, if the averages are similarly computed in each case. The comparison in the latter case may be very approximately correct, since it is drawn, not between a fact and a mathematical concept, but between two mathematical concepts.

II. WAGES FROM ONE GEOGRAPHIC AREA TO ANOTHER

In addition to the material secured in the Federal Telephone Investigation, there are three sources for a discussion of wages from one geographic area to another—the railroad wage statistics compiled by the Interstate Commerce Commission, the report of the Senate Committee on Wages and Prices, and Bulletin Number 77 of the United States Bureau of Labor. In the discussion of average wages, the relative value of the two last sources was discussed. Though by no means conclusive, these figures are, nevertheless, of considerable value.

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The Interstate Commerce Commission statistics, carefully collected and compiled, give average wages within a very narrow group of employment, such, for example, as "locomotive engineers," or "conductors." These occupations are everywhere similar, and hence even average wages in them are very comparable.

The figures for the railroads of the United States appear on the opposite page.

The Interstate Commerce Commission has divided the railroads of the United States into ten groups, which are designated by the figures at the left of the table. To the right of each figure are the abbreviated names of the States comprised within the group. The three lower lines of statistics, secured from State labor reports, were included in the table in order to bring together all of the available evidence. The North Carolina figures relate to the Atlantic Coast Line Railroad; and the Washington figures refer to the Northern Pacific; while the statistics from Virginia include all railroads. The trades of "Machinist" and "Carpenter" are not peculiar to railroading, yet they are included because they are universal employments. The "Operators and Dispatchers" are telegraph operators, train dis-

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AVERAGE DAILY WAGES, RAILROADS OF THE UNITED STATES CLASSIFIED BY EMPLOYMENTS—1908¹

States	Enginemn	Conductors	Machinists	Carpenters	Trackmen	Operators and Dispatchers
1. New England.....	\$3.91	\$3.25	\$2.66	\$2.37	\$1.63	\$2.26
2. Middle States.....	4.43	3.65	2.77	2.49	1.52	2.26
3. Indiana, Michigan, Ohio.....	4.25	3.65	2.85	2.29	1.54	2.15
4. West Virginia, Virginia, North Carolina, South Carolina.....	4.34	3.39	2.83	2.19	1.17	2.16
5. South Atlantic.....	4.63	3.82	2.99	2.15	1.13	2.11
6. North Central.....	4.39	3.93	2.93	2.35	1.51	2.27
7. Montana, Wyoming, South Dakota, Nebraska.....	4.59	3.94	3.49	2.62	1.57	2.69
8. Colorado, Kansas, Arkansas, Oklahoma.....	4.80	4.33	3.31	2.34	1.39	2.36
9. Texas, Louisiana.....	4.89	4.44	3.47	2.56	1.33	2.67
10. Western States.....	4.71	4.40	3.78	2.92	1.60	2.95
North Carolina (Bureau of Labor, 1909)— A. C. L. RR.....	4.26	3.57	3.28	2.39	.94	1.96
Virginia (Bureau of Labor, 1909).....	4.47	3.32	2.93	2.29	1.21	2.14
Washington (Bureau of Labor, 1907-8)— N. P. RR.....	4.55	4.82	3.20	....	1.44	2.40

¹ Groups 1-10 from "Statistics of Railways in U. S., 1908." Interstate Commerce Commission. Washington, 1909. Pp. 48-52.

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patchers and the like,—trades similar in all sections of the country. All of the trades included in the table are rather limited in extent, and sufficiently definite to be similar in all sections.

A study of this table shows the slight wage variation from one section of the country to another. Thus the wages of "Enginemen" and "Conductors" are remarkably uniform, with the one exception of New England, where the lowest wages are paid to these two groups as well as to "Machinists." This table apparently contains a direct refutation of the theory that wages are higher in the North than in the South, as it clearly shows the lowest wage in three occupations to be in New England. The wages of "Carpenters," a rather inclusive trade, are surprisingly similar with a variation from \$2.15 in the South Atlantic States to \$2.92 in the far-western States; so, too, the wages of "Operators and Dispatchers" are fairly uniform; while the variation is greatest among "Trackmen"—common laborers.

The table could really be divided into two sections, the first including groups 1 to 6 of the Commerce Commission, with North Carolina and Virginia; and the second comprising groups 7 to 10 of the Commission, with Washington in addi-

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tion. As between the North and the South, there is really little variation, but all of the Western States show wages considerably higher than those of the Eastern Section of the country. The Interstate Commerce Commission Statistics show clearly that in a unionized trade, wages are very similar as between geographic areas of the United States. The least variation appears among the most highly skilled workers, while the variation is greatest among the unorganized, unskilled trackmen and other laborers.

The two remaining groups of statistics included under this section are comparatively similar. The material from Bulletin 77 (the latest Bulletin containing wage data) includes Manufacturing and Structural Work, giving the number employed, hours per day and wages per hour for 1907-8. The material from the Report of the Senate Committee gives merely wages per hour for 1910. The two groups of material are not, of course, comparable, but they are, in so far as the Building trades are concerned, remarkably similar. In the material furnished by the Bulletin, two facts, already emphasized, are apparent. There is little or no variation in the wages paid to a certain occupation in the four Eastern groups

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GEOGRAPHICAL DISTRIBUTION OF AVERAGE WAGES (CENTS) PER HOUR AND HOURS PER WEEK—1907¹

Geographical Division	Brick Manufacturing				Building Trades				Cars—Steam Railroad				Foundry and Machine Shop			
	Number		Hours		Number		Hours		Number		Hours		Number		Hours	
	of	per	per	Hour	of	per	per	Hour	of	per	per	Hour	of	per	per	Hour
	Employees	Week	Hour	Hour	Employees	Week	Hour	Hour	Employees	Week	Hour	Hour	Employees	Week	Hour	Hour
Kiln Firemen																
North Atlantic..	64	80	17		1,928	46	61		83	56	31		515	56	31	
South Atlantic..	56	80	14		496	49	58		117	56	28		79	54	32	
North Central..	84	84	20		1,591	47	62		542	57	35		364	55	31	
South Central...	58	73	14		419	49	63		218	59	32		122	58	31	
Western.....	21	70	31		385	45	83		190	54	38		161	53	46	
Kiln Setters																
North Atlantic..	68	58	23		3,020	47	46		857	56	26		4,018	56	29	
South Atlantic..	26	57	22		1,057	49	38		922	56	19		522	54	31	
North Central...	67	56	30		2,115	48	42		1,944	57	23		2,948	55	30	
South Central...	30	61	21		640	52	35		991	60	22		270	56	34	
Western.....	23	49	39		554	45	57		966	54	27		510	54	39	
Laborers																
North Atlantic..	398	59	16		818	46	52		266	58	27		2,120	56	33	
South Atlantic..	331	59	15		247	49	49		609	56	30		314	55	32	
North Central...	364	57	22		656	46	54		2,431	56	34		1,479	56	32	
South Central...	271	60	15		248	48	54		841	59	33		203	56	33	
Western.....	142	53	29		296	44	77		622	54	38		238	55	43	
Off Bearers																
North Atlantic..	91	54	18		2,597	54	20		443	55	33		462	56	35	
South Atlantic..	48	52	17		727	54	16		299	55	24		75	55	35	
North Central...	109	52	25		3,007	56	22		950	56	288		383	55	34	
South Central...	38	60	14		717	55	17		209	59	24		58	56	35	
Western.....	20	49	28		318	49	29		154	54	30		65	55	46	

¹ Bulletin 77, U. S. Bureau of Labor, July, 1908. Pp. 27-39.

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GEOGRAPHICAL DISTRIBUTION OF BUILDING TRADE WAGES IN
CITIES (1910-11), EXPRESSED IN CENTS PER HOUR¹

	Structural					
	Brick- layers	Iron Setters	Plumbers	Carpen- ters	Painters	Cement Finishers
<i>North Atlantic</i>						
Baltimore, Md.	62½	43¾	43¾	43¾	37½	50
Boston, Mass.	60	50	55	50	45	50
Buffalo, N. Y.	60	55	50	45	45	45
Newark, N. J.	65	56¼	56¼	50	44	40
New York, N. Y.	70	62½	62½	62½	50	62½
Philadelphia, Pa.	62½	50	43¾	45	40	45
Pittsburg, Pa.	65	50	56¼	50	42½	50
Providence, R. I.	60	35	50	41	37½	50
<i>South Atlantic</i>						
Washington, D. C.	62½	50	50	50	43¾	50
<i>North Central</i>						
Chicago, Ill.	67½	65	68¾	60	60	57½
Cincinnati, Ohio.	62½	50	50	50	42½	40
Cleveland, Ohio.	65	60	56¼	42½	42½	50
Detroit, Mich.	65	40	50	45	45	44
Indianapolis, Ind.	65	60	50	42½	40	35
Kansas City, Mo.	75	56¼	62½	50	50	50
Milwaukee, Wis.	65	56¼	56¼	40	42½	..
Minneapolis, Minn.	65	50	50	45	45	35
Omaha, Neb.	70	56¼	62½	50	47½	62½
St. Louis, Mo.	70	65	66¼	60	55	55
St. Paul, Minn.	65	50	56¼	45	45	45
<i>South Central</i>						
Louisville, Ky.	60	40	50	43¾	40	40
<i>Western</i>						
Denver, Colo.	75	56¼	62½	60	50	68¾
Portland, Ore.	75	56¼	68¾	50	50	62½
San Francisco, Cal.	87½	62½	75	62½	56¼	75
Seattle, Wash.	75	62½	81¼	62½	56¼	75

¹ Report of the Select Committee on Wages and Prices of Commodities, Senate Report No. 912, 61st Congress, 2nd Session, Part I. Pp. 60-67.

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of States, while with Western groups, the wages per hour are considerably higher. As, however, the number of hours worked per day is less in this Western group than in the Eastern States, the disproportion between the figures is not so great as it at first appears.

The statistics of the Select Committee, also collected from employers, show almost identical conditions, except that the variation between the East and West is not so marked as in the figures furnished by the Bureau of Labor. In fact, the variation in wages from city to city in the same geographic area, is in most cases as great as the variation from one geographic area to another.

The foregoing figures substantiate the conclusion already reached in the discussion of the Telephone Investigation; demonstrating beyond question that there is no considerable wage variation per hour or per day between the different sections of the United States. This statement should, perhaps, be modified by excepting a slightly higher wage in most trades in the Western States. The fact remains, however, that the available data does not show any marked variation in wages from one part of the United States to another.

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III. WAGES FROM CITY TO CITY

The material compiled by the Select Senate Committee, cited in the previous section, indicates a decided wage variation from city to city within the same geographic area. The additional data which is procurable fully confirms the data of the Select Committee in this respect. It will be remembered for example that the Federal Investigation of Telephone Companies showed a marked variation in wages from one city to another.

Only two additional groups of evidence need be adduced,—one from the Massachusetts Wage Report for 1908, and one from the Ohio Wage Report for 1908. Both groups of statistics give average annual earnings, and the Ohio statistics give in addition, average daily earnings.

The Massachusetts figures are shown on next page.

Some of the figures are incomplete because of an intense localization, under which one town makes one product. Attleboro, for example, manufactures jewelry; Fall River, cotton goods; Brockton, boots and shoes; Lowell, cotton goods, and so on. In the towns, other than those special-

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AVERAGE ANNUAL EARNINGS IN CERTAIN MASSACHUSETTS CITIES AND TOWNS FOR THREE SELECTED INDUSTRIES¹

Cities and Towns	Population (1900)	Boots and Shoes		Cotton Goods		Foundry and Machine Shop	
		Number of Employees	Average Annual Earnings	Number of Employees	Average Annual Earnings	Number of Employees	Average Annual Earnings
Boston.....	560,892	....	....	....	....	3,929	\$681.47
Worcester....	118,421	764	\$543.32	227	\$483.74	4,250	598.06
Fall River....	104,863	....	....	24,225	447.40	547	507.45
Lowell.....	94,969	1,064	453.40	10,955	444.77	1,935	497.67
Lynn.....	68,513	13,038	596.47	....	....	266	640.98
Lawrence....	62,559	....	....	4,422	487.54	867	578.49
Brockton....	40,063	13,078	654.10	....	....	146	690.03
Chelsea.....	34,072	1,855	439.04	....	....	....	....
Beverly.....	13,884	1,192	549.54	....	....	....	....
Peabody.....	11,523	....	....	....	....	....	....
Milford.....	11,376	558	558.15	....	....	345	639.95
Weymouth...	11,324	987	618.36	....	....	....	....
Garden.....	10,813	....	....	....	....	....	....
Natuck.....	9,488	811	558.72	....	....	103	497.84
Rockland....	5,327	1,540	644.18

¹ Statistics of Manufacture, Massachusetts, 1908. Boston, 1909. Pp. 12-32.

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izing in some particular industry, there is no establishment engaged in that industry. Thus in so large a centre as Boston, there are no "Boots and Shoes" and no "Cotton Goods" manufactured. Hence, after a considerable search, it was found there were only three representative industries which existed in a sufficiently large number of towns to permit of a comparison,—Boots and Shoes, Cotton Goods, and Foundry and Machine Shop Products. Even these industries exist only here and there, while with the exception of Boots and Shoes and Foundries and Machine Shops no single industry was reported from a considerable number of cities and towns. Nevertheless for Boots and Shoes and for Foundry and Machine Shops the figures are fairly complete.

There is, it will be observed, little wage variation from town to town in the Boot and Shoe industry, and only a slight variation in the Foundry and Machine Shop industry. There is no variation with city size, some of the smallest towns paying higher average wages than the larger cities. Thus the available Massachusetts data indicates that while wages do vary from city to city, there is no apparent regularity in the variations.

Turning now to the statistics from Ohio, a much

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more complete statement is possible. The Ohio statistics of daily and yearly average wages are published by cities and industries, three of which

AVERAGE WAGES IN LARGE AND SMALL CITIES IN CERTAIN TRADES AND OCCUPATIONS—OHIO, 1907 ¹

FOUNDRY AND MACHINE SHOPS

City	Population (1900)	Laborers		Moulders		Machinists	
		No.	Average Yearly and Daily Earnings	No.	Average Yearly and Daily Earnings	No.	Average Yearly and Daily Earnings
Lima.....	21,723	9	\$563.04	....	....	9	\$838.44
			1.84		....		2.74
Zanesville.....	23,538	133	473.04	80	\$955.65	25	908.82
			1.62		3.45		2.97
Hamilton.....	23,914	123	493.48	295	800.53	5	632.25
			1.69		2.77		2.25
Canton.....	30,667	217	478.27	204	761.27	31	765.00
			1.69		2.69		2.55
Springfield.....	38,253	271	454.77	309	851.20	105	703.95
			1.63		3.04		2.47
Akron.....	42,728	6	470.00	35	857.48	49	885.79
			2.00		3.03		2.83
Youngstown.....	44,885	96	539.12	97	985.30	30	900.00
			1.84		3.34		3.00
Villages (other) ..	....	704	460.80	729	736.56	219	686.40
			1.60		2.64		2.40
Dayton.....	85,333	1,735	464.88	707	775.52	876	615.00
			1.56		2.62		1.92
Columbus.....	125,560	1,134	554.49	278	821.73	188	823.54
			1.83		2.73		2.71
Toledo.....	131,822	1,101	502.86	462	758.28	189	797.34
			1.74		2.67		2.74
Cincinnati.....	325,902	477	490.20	543	886.35	95	811.04
			1.72		3.11		2.74
Cleveland.....	381,768	5,648	482.63	2,433	814.90	1,248	797.94
			1.67		2.81		2.79
Cities (other)....	941	462.40	559	764.46	319	736.60
			1.60		2.79		2.54

¹ Bureau of Labor Statistics—Ohio, 1908, Pp. 114-491.

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AVERAGE WAGES, ETC.—OHIO, 1907 (*Continued*)

SASH, DOORS, ETC.

City	Population (1900)	Machine Hands		Bench Hands		Carpenters	
		No.	Average Yearly and Daily Earnings	No.	Average Yearly and Daily Earnings	No.	Average Yearly and Daily Earnings
Lima.....	21,723	5	\$525.00 2.50	1	\$750.00 2.50	5	\$675.00 2.25
Zanesville.....	23,538	10	787.80 2.60	8	767.50 2.50	..	....
Hamilton.....	23,914	8	726.18 2.47	3	646.14 2.42	84	836.59 2.69
Canton.....	30,667	7	711.89 2.57	..	....	9	736.02 2.61
Springfield.....	38,253	14	545.40 1.80	11	757.50 2.50	..	....
Akron.....	42,728	12	690.75 2.25	6	675.00 2.25	19	675.00 2.71
Youngstown.....	44,885	7	767.14 2.57	..	....	103	978.25 3.25
Villages (other) ..	....	198	568.48 2.09	81	558.60 2.30	221	693.10 2.39
Dayton.....	85,333	99	738.84 2.62	113	788.62 2.62	216	905.92 2.98
Columbus.....	125,560	60	779.59 2.59	22	820.45 2.69	7	727.50 2.50
Toledo.....	131,822	147	597.72 2.04	17	578.26 1.98	63	682.42 2.29
Cincinnati.....	325,902	199	747.12 2.64	75	688.94 2.59	122	988.38 3.23
Cleveland.....	381,768	163	758.52 2.58	58	784.40 2.65	177	1,002.64 3.32
Cities (other)....	....	257	656.98 2.14	229	663.75 2.25	380	719.36 2.56

were selected for the first comparison. These three industries were chosen because they were found, extensively, in the greatest number of cities. The cities, arranged according to population, fall naturally into two groups,—those with

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more than 50,000 inhabitants and those with less than 50,000 inhabitants. Those above 50,000 are designated in the report as "cities," while those below are designated as "villages." All of the occupations under consideration are occupations of males. Hence they are fairly comparable.

The variations in annual earnings are, in all occupations, considerable, yet inconsistent. Dayton, with a population of less than a hundred thousand, is, in some industries, lower, but in others higher, than Cleveland, with a population more than four times as great. In the villages the same discrepancy appears. No village is uniformly high, and none is uniformly low. Whether the cause of variation be a difference in the standard of the various plants under consideration, or differences in nationality, custom, standards of living, and the like cannot be decided in a study of wage statistics.

There is but one obvious conclusion which can be drawn from the figures cited in this section,—that within the same State, in the same occupations and industries, wages vary from city to city and from town to town. This variation is most irregular, so far as the statistics indicate, being governed neither by location nor by city size.

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IV. WAGES FROM LARGE TO SMALL CITIES

A further study of the Ohio statistics just referred to indicates clearly that wages do not, as is often assumed, vary with city size. It is commonly supposed that wages increase with the size of the city, so that wages in a great city would always be higher in a given occupation than wages in the small neighboring towns. There is, without question, some tendency in this direction. New York City, for instance, the largest of the cities, showed the highest average wages of telephone operators. A like variation in wages appeared in the reports of the telephone companies for towns classified by population size. The rule is, nevertheless, of limited application—as is clearly shown by the following evidence.

A comparison of the Massachusetts and Ohio statistics printed in the previous section, showed pretty conclusively that there was no great variation between the wages in cities varying from less than a hundred thousand to considerably over three hundred thousand in population. A further analysis of these Ohio statistics shows that in the villages, ranging in size from twenty to

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forty-five thousand, the earnings are frequently higher than the earnings in the larger cities.

Some light may be thrown on the problem by a statement for "Laborers" of wages by the day and by the year, in seven Ohio industries. Laborers are usually unskilled workers, useful only because of brute strength or of the human capacity to "tend" a machine, and see that it does not go wrong. The term "Laborers" is probably more restricted as regards earning capacity than the terms "Machinists" or "Boiler Makers." Furthermore, it was practically the only employment which appeared in numerous industries in the various towns.

DAILY WAGES OF "LABORERS"—OHIO—1907¹

Cities	Brick and Tile		Boilers and Tanks		Machinery Manufacturing		Foundry and Machine Shop	
	No.	Daily Wage	No.	Daily Wage	No.	Daily Wage	No.	Daily Wage
Lima.....	10	\$1.75	163	\$1.60	..	..	..	..
Zanesville.....	26	1.55	..	..	..	..	133	\$1.62
Hamilton.....	44	1.96	107	1.64	194	\$1.72	123	1.69
Canton.....	65	1.56	95	1.63	94	1.64	217	1.69
Springfield.....	..	..	11	1.80	52	1.74	271	1.63
Akron.....	168	1.62	9	1.60	107	1.66	6	2.00
Youngstown.....	..	..	104	1.57	..	..	96	1.84
Villages (other).....	233	1.43	898	1.66	167	1.64	104	1.60
Dayton.....	86	1.88	108	1.72	593	1.64	1,735	1.56
Columbus.....	72	1.73	17	1.65	206	1.64	1,134	1.83
Toledo.....	104	1.91	19	1.89	73	1.69	1,101	1.74
Cincinnati.....	59	1.86	61	1.85	462	1.71	477	1.72
Cleveland.....	71	1.62	199	1.85	734	1.60	5,648	1.67
Cities (other).....	1,057	1.62	720	1.60	1,113	1.65	941	1.69

¹ Ibid.

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From this table it will be observed that the wages per day range very slightly higher in the cities than in the villages. A study of the tables from which these statistics were derived shows, on the other hand, that the earnings per year are, if anything, higher in the villages than in the cities. It would be obvious from such a statement that the unemployment had been more of a factor in the city than in the village, hence the discrepancy in wages. Whether this is true of unemployment for the year 1907 only, or whether it is always true, is a question to which no answer can be given. It is obviously present during the year under consideration.

In many of the trades thus far considered, labor unions are weak or non-existent. "Laborers," for example, are not, as a rule, organized. Hence labor unions would have little influence on wages. If, in contrast to these unorganized, or partially organized trades, a strongly organized trade be considered, the uniformity in wages is almost absolute. The statistics for one strongly organized trade appear in the Kansas Labor Report for 1909. Considerable space is there devoted to an analysis of wages as reported by contractors and unions in the Building Trades. As the contrac-

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tors' reports were rather complete, while those of the unions were fragmentary, the compilation will be made from the contractors' statements.

WAGES IN CITIES AND TOWNS—AVERAGE WAGES PER DAY AS
REPORTED BY CONTRACTORS—KANSAS, 1908 ¹

Cities and Towns	Brick Masons	Carpenters	Plumbers	Laborers
<i>Over 50,000 population</i>				
Kansas City.....	\$5.60	\$3.78	\$4.96	\$2.04
<i>25,000-50,000 population</i>				
Topeka.....	5.00	3.00	4.00	1.84
<i>10,000-25,000 population</i>				
Atchison.....	5.00	2.76	3.28	2.00
Fort Scott.....	5.00	2.97	2.48	1.36
Galena.....	6.80	2.92	....	1.85
Lawrence.....	5.60	2.88	3.68	2.16
Leavenworth.....	5.60	3.43	5.00	1.92
Pittsburg.....	5.20	3.00	3.28	2.40
Wichita.....	6.00	3.50	4.32	2.32
<i>5,000-10,000 population</i>				
Arkansas City.....	5.20	3.24	4.50	2.00
Emporia.....	5.00	3.00	....	....
Hutchinson.....	5.60	2.92	4.00	1.62
Newton.....	6.12	2.70	3.78	2.00
Ottawa.....	6.30	3.30	3.60	1.80
Parsons.....	5.20	2.88	3.84	1.76
Winfield.....	6.00	3.04	3.51	1.89

In two instances, among Carpenters and Plumbers, the wages in Kansas City are slightly higher than the wages in the majority of the smaller cities. In the other two occupations, on the other

¹ Annual Report, Kansas Bureau of Labor, 1909. Topeka, 1910. Pp. 29-53.

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hand (Brick Masons and Laborers), the wages are highest in the cities of 10,000 to 25,000, and almost as high in the smaller towns. There can be no deductions from these figures, therefore, except that, in a strongly organized trade, wages do not vary with population from centre to centre within the same State.

The material in this section justifies the conclusion that while a slight variation may occur from city to city, it is not reducible to any formulated rule, but appears to depend upon the individual establishments rather than upon the size or location of the cities or towns.

V. GEOGRAPHIC VARIATION IN WAGES

In spite of the general contrary opinion there is no considerable variation in wages accompanying changes in geographic location. This statement holds particularly in organized trades such as the building trades, and the railway brotherhoods. In unorganized trades, represented by "Laborers," the variation is somewhat greater.

Speaking generally, the South Central States show a slightly lower range of wages, while the Western States show a slightly higher range of wages than the other three groups of States. The

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variation is not, however, very considerable in any case. Even a contrast between the lowest (South Central) and the highest (Western) group of States shows, for similar organized occupations, no considerable wage variation.

Whatever the variation from one geographic area to another, it is little if any more extensive than the variation from city to city within the same geographic area. With the exception of the cities in the Western group of States, where there is almost no variation in wages for similar occupations, the wages vary somewhat from one city to another within a given geographic area, and even within a given State. The conclusion may fairly be reached, therefore, that geographic variations in wages within a given industry are greater in organized than in unorganized trades, but in no case are they very extensive in the leading industries.

It is probable that there is some variation with city size, though this point is by no means established. In the Telephone industry wages varied directly with population size, but the data from State reports showed no such regular variation. That there is a variation in wages from rural to urban centres of population is undoubtedly true, but this variation is probably due to the varying

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character of rural and urban industry, as it does not appear within all of the industries studied.

There is, therefore, a slight variation with geographic location, rather irregular and incapable of reduction to formulas. It is neither definite in operation nor certain in extent, and the importance of the phenomena has certainly been exaggerated.

CHAPTER IX

THE DISTRIBUTION OF WAGES WITHIN INDUSTRY

I. SPECIALIZED EMPLOYMENTS AND THE DISTRIBUTION OF WAGES

The hand trades have practically disappeared from modern industry, so that craftsmanship, in its original meaning, is a thing of the past. A man no longer makes a shoe, a nail, or an overcoat; rather he co-operates with a hundred or a thousand other persons, each of whom, like himself, has some small and apparently meaningless operation to perform. These specialized occupations, however, are anything but meaningless, for organized and directed by a captain of industry, they create a completed product.

This intense specialization, which has been developed in recent years, has divided labor horizontally into groups,—consisting, broadly, of unskilled, semi-skilled and skilled laborers. This division is comparatively recent because under a

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craftsmanship system, each man, learning his trade as an apprentice, became ultimately a skilled or master craftsman. From apprentice, to journeyman, to master craftsman was a series of steps which most of the industrial workers climbed, and even those who never became masters were nevertheless skilled, thoroughly trained mechanics. In contrast with this old system, under which a man received a rounded education in his business, the system of specialization which has replaced the handicraft system, permits of little apprenticeship, since each man, with or without the aid of a machine, creates a small part of a given unit of product. He learns to perform one operation, instead of making a completed whole. In the course of doing this special thing, he becomes not skilled, but dexterous, so that through specialization and organization his total product has been made larger, but his training is along the narrowest lines.

There is no method of deciding finally which trades are skilled and which are semi-skilled, as no absolute line can be drawn on one side of which all skilled and on the other side of which all semi-skilled men may be placed. A locomotive engineer receives \$3.50 per day, while the brakeman

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on the train is paid \$2.25. The engineer is classed as a skilled man and the brakeman as a semi-skilled man. The fireman, with \$3 a day, comes in between the two,—as a borderline case.

That industry has been thus stratified is easily proved, but the extent of the stratification and the proportionate distribution of employees over the various wage groups is difficult of demonstration. The stratification is, of necessity, generally admitted. It is concerning the extent that controversy is rife. This chapter is written to answer as completely as may be, the question as to the proportion of wage earners who occupy positions in the different wage strata. How many men in the industries of the United States receive common labor wages? What proportion of the male wage earners are paid less than \$1,000 a year? How many high-paid and how many low-paid men are there in a given city or State? Is it true that modern industry is so organized that the man who wishes to do so may “rise” to the higher industrial positions? Is there “plenty of room at the top”? No definite answers have as yet been made to these questions, yet if it can be demonstrated, that three of the great representative industries of the country pay wages of more

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than \$1,000 to 10 per cent. of their male wage earners, while less than 10 per cent. of the adult males in the three States which furnish reliable, up-to-date statistics likewise receive more than \$1,000 annually, the conclusion may well be drawn that in the industries of the United States at large not more than 10 per cent. of the adult male wage earners receive annual earnings of more than \$1,000. While such a conclusion would not be absolutely accurate, it would be as accurate as any conclusion which could be reached without securing data from every industry and every locality in the United States. Several groups of wage statistics will therefore be discussed in an attempt to establish the actual distribution of wage workers over the various wage groups.

Females are very briefly discussed in this chapter, for three reasons,—

1. They do not as a rule become skilled at all, hence they earn, as has already been shown, in the vast majority of cases, less than \$9 a week. That is, instead of being distributed over the wage scale, they are massed at the bottom.

2. As yet, women enter industry only temporarily. The census shows that the great majority of them who are at work are between 16 and 30

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years of age,—that is, they are in industry until they get married. As they do not intend to make a life work of their pursuit, they do not rise in it.

3. The available statistics, in the cases of railroads and the South Bethlehem Steel Co., relate to males only. As this best data is of males, comparisons with it and conclusions from the entire data, can be for males only. Hence the major portion of the chapter will be devoted to statements of the wages of males.

II. RAILROAD WAGES

The largest single group of statistics from which deductions on wage distribution may be made are published by the Interstate Commerce Commission. These statistics, it is true, are averages compiled from reports furnished to the Commission by the interstate railroads, yet the field covered is so extensive, and the data submitted is so similar, that the results may fairly be employed in a study like the present one.

The work of the Commission is very thorough. The material submitted to it is carefully scrutinized and compiled, so that the data included in the "Statistics of Railways" is accurate and reliable as any that exists, while the method of

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presenting the statistics is, for average wages, most admirable. The data is discussed by the Commission, first for the United States as a whole and then for ten groups of States, arranged

DISTRIBUTION OF WAGES IN THE VARIOUS EMPLOYMENTS. RAILROADS OF THE UNITED STATES—1909¹

Average Daily Wages		Number	Average Daily Wages	Per cent.
Over \$10	General Officers.....	5,492	\$12.67	*
\$5 to 10	Other Officers.....	8,022	6.40	*
4 to 5	Enginemen.....	57,077	4.44	4
3 to 4	Conductors.....	43,608	3.81	3
2 to 3	Machinists.....	48,237	2.98	..
	Firemen.....	60,349	2.67	..
	Other Trainmen.....	114,760	2.59	..
	Carpenters.....	60,867	2.43	..
	Employees—Account floating equip- ment.....	8,758	2.31	..
	General Office Clerks.....	69,959	2.31	..
	Telegraph Operators and Dispatchers	39,115	2.30	..
	Other Shopmen.....	195,110	2.13	..
	Station Agents.....	36,519	2.08	..
		<hr/> 633,674		42
\$1 to \$2	All other Employees and Laborers..	210,898	1.98	..
	Section Foremen.....	41,859	1.96	..
	Other Station Men.....	136,733	1.82	..
	Switch Tenders, Crossing Tenders, and Watchmen.....	44,698	1.73	..
	Other Trackmen.....	320,762	1.38	..
		<hr/> 754,950		51
		<hr/>		<hr/>
Total.....		1,502,823		100

* Less than 1 per cent.

¹ Annual Report of the Statistics of Railways in the U. S. for year ending June 30, 1909. Interstate Commerce Commission. Washington, 1910. Pp. 34 and 40.

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according to a classification adopted by the Commission to facilitate its work. The wages are not separated into smaller wage groups because, with averages, the deductions may not be too minutely drawn. If figures are stated in detail, the temptation to draw detailed deductions, overwhelming as it always is, would be unjustified in the present case. Classified by average daily earnings, the railroad employees of the United States are grouped as follows. (The average daily earnings are secured by dividing the annual earnings by the number of days worked.)

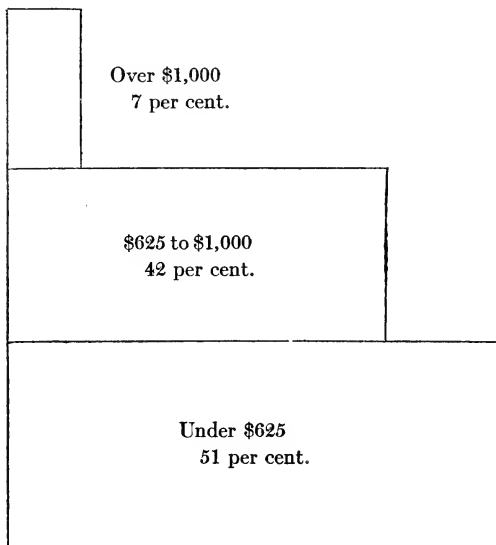
Hence, even including the "Officers," who are not wage earners in the sense that the term has been used throughout this book, it appears that in 1909, 51 per cent. of the million and a half railroad employees of the United States received less than \$625 per year; that 9.3 per cent. received less than \$1,000 per year, leaving 7 per cent. who earned more than \$1,000 annually.

The extreme contrast between these groups of wage earners may, perhaps, be more clearly brought out by the diagram on the opposite page.

A similar table is compiled for the railroads of Group VI, comprising the States of Minnesota, Wisconsin, Iowa and Illinois, together with

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parts of North and South Dakota and Missouri. This is the great railroad centre of the Middle West; a little less than one-fifth of all of the railroad employees in the country are reported in



this group; hence it is perhaps the most representative railroad centre in the United States. A comparison of the following table with the table for all of the railroads of the United States will show that while the wages are slightly higher in the Middle West than in the entire country, the relative dis-

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tribution over the wage group remains practically the same.

DISTRIBUTION OF WAGES—RAILROADS OF THE UNITED STATES— NORTH CENTRAL DIVISION¹

Average Daily Wages		Number	Daily Wages	Per cent.
Over \$10	General Officers.....	769	\$15.43	*
\$5 to 10	Other Officers.....	924	7.88	*
4 to 5	Enginemen.....	10,116	4.39	4
3 to 4	Conductors.....	7,122	4.00	3
2 to 3	Machinists.....	7,595	2.97	..
	Firemen.....	10,313	2.75	..
	Other Trainmen.....	19,417	2.69	..
	Carpenters.....	10,596	2.36	..
	Telegraph Operators and Dispatchers	6,460	2.28	..
	Employees—Account floating equip- ment.....	66	2.22	..
	General Office Clerks.....	11,257	2.21	..
	All other Employees and Laborers..	41,923	2.12	..
	Switch Tenders, Crossing Tenders and Watchmen.....	8,144	2.06	..
	Other Shopmen.....	39,339	2.06	..
	Station Agents.....	7,503	2.05	..
		<hr/>		
		162,613		60
\$1 to \$2	Section Foremen.....	8,764	1.87	..
	Other Station Men.....	22,975	1.81	..
	Other Trackmen.....	59,702	1.42	..
		<hr/>		
		91,441		33
		<hr/>		
	Total.....	272,985		100

The railroads of the United States, employing more persons than any other single industry, pay a wage of less than \$625 a year to about one-half of their employees, while less than one railroad

¹ Supra, pp. 38 and 43.

THE DISTRIBUTION OF WAGES

employee in ten receives an average wage of more than \$1,000 annually.

The railroads, let it be remembered, employ almost exclusively adult males whose occupations are, in many instances, of a highly skilled sort—conductors, brakemen, engineers, operators and dispatchers are men who assume serious responsibilities, while many other occupations involve considerable skill. In spite of these obvious facts, the wages of railroad labor are surprisingly low.

III. THE SPECIAL WAGE REPORTS

A careful analysis of four special wage reports appears in a previous chapter. Two of these four reports (Wisconsin Telephone Investigation and Illinois Department Store Investigation) are not available for the purposes of this chapter, as they give figures for the employment of women only in a very restricted field. The other reports (Federal Telephone Investigation and South Bethlehem Investigation) provide excellent wage data, classified by wages received, the first for the United States as a whole and for individual cities; the second for one steel plant located in South Bethlehem, Pennsylvania.

The railroad statistics were not absolute.

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While the averages which they gave were for very restricted classes of employments, they were, none the less, averages. Entitled to a measure of recognition, they cannot, however, be compared to the classified wage statistics furnished in these special reports. Again, the value of these reports is enhanced by the method of compilation,—from the pay-rolls of the companies involved. Hence the conclusions based on these reports as to the distribution of wage workers in modern industry, are by far the most reliable of any which can be reached from the figures presented in this study.

The figures secured in the recent Federal investigation¹ of telephone systems are classified by monthly wages, and by sex. With the exception of the general officers, all of the employees of the Bell System are included. The distribution of the 37,760 employees over the various wage groups is shown at top of opposite page.

It therefore appears that 61.5 per cent. of the whole number of employees, and 21.1 per cent. of the male employees, earn less than \$600 per year,

¹ Investigation of Telephone Companies. Charles P. Neill. Washington Government Print, 1910. Senate Document No. 380, 61st Congress, 2nd Session.

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BELL TELEPHONE SYSTEM—WAGES PAID—1909-10¹

	Total Employees	Yearly Wages							
		Under \$360		\$360-\$600		\$600-\$960		\$960 and Over	
		No.	Per ct.	No.	Per ct.	No.	Per ct.	No.	Per ct.
Bell System..	37,760	8,651	22.9	14,572	38.6	10,370	27.5	4,167	11.0
Males.....	17,139	606	3.5	2,994	17.6	9,468	54.6	4,092	24.3
Females...	20,621	8,045	39.0	11,578	56.2	902	4.4	75	.4

while only 11 per cent. of all of the employees, and 24.3 per cent. of the males, received more than \$960 annually.

In considering these figures it must be borne in mind that the Telephone industry, even more markedly than the railroad industry, demands semi-skilled and skilled employees. Thus, of the 37,760 employees, 16,258 or nearly half are operators (semi-skilled), while the following numbers represent more or less skilled callings.

Agents.....	371
Bookkeepers.....	316
Cable Splicers.....	716
Clerks.....	4,702
Collectors.....	536
Foremen.....	615
Inspectors.....	772
Installers.....	1,460
Linemen.....	2,028
Repairmen.....	679
Stenographers.....	441
Supervisors.....	1,647
Wire Chiefs.....	319

¹ Supra, pp. 85 to 87.

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More than thirty thousand of the Bell Telephone employees are occupying positions involving varying degrees of skill, danger and responsibility. Only about six thousand (17 per cent.) of the entire force is left to be accounted for. Of this group but 808 are classed as "laborers." Among the remainder are superintendents, paymasters, chief operators, and other highly skilled or responsible employees. The employees of the Bell System are therefore predominantly semi-skilled or skilled. In spite of this fact, the wages are low, 61.5 per cent. of all the employees receiving under \$600; while of the men, 21.1 per cent. received less than \$600 and 75.7 per cent received less than \$960. In a comparatively highly skilled industry, three-quarters of the male employees and more than ninety-nine per cent. of the female employees are paid less than \$1,000 a year.

The contrast is sharp between the high-skilled Telephone industry and the Steel industry, with its great masses of semi-skilled and unskilled employees. The exhaustive investigation of the Bethlehem Steel Works shows the following

¹ Report on Strike at Bethlehem Steel Works. Charles P. Neill. Washington, Government Print, 1910. Senate Document No. 521, 61st Congress, 2nd Session. P. 60.

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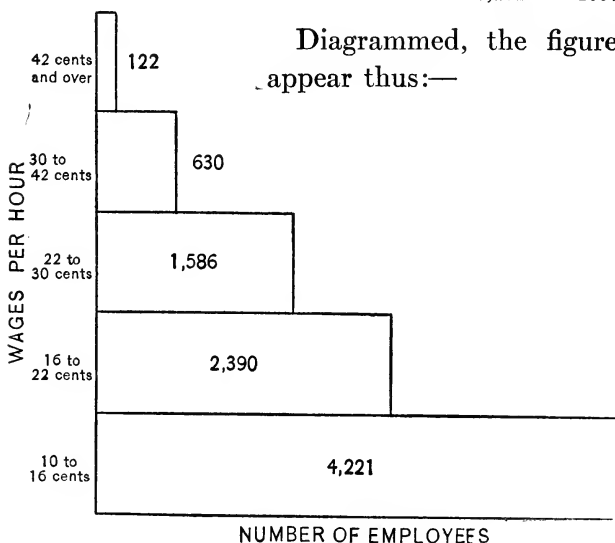
classification of employees (exclusive of office force, superintendents and general officers).

DISTRIBUTION OF EMPLOYEES BY WAGES PER HOUR

(APPRENTICES OMITTED)

	Total	Per cent.
10 to 16 cents per hour.....	4,221	45.9
16 “ 22 “ “ “	2,390	26.1
22 “ 30 “ “ “	1,586	17.2
30 “ 42 “ “ “	630	6.9
42 cents and over per hour.....	122	1.3
	<hr/>	<hr/>
Apprentices.....	235	2.6
	<hr/>	<hr/>
	9,184	100.0

Diagrammed, the figures
appear thus:—



WAGES IN THE UNITED STATES

Somewhat less than 10 per cent. of the railroad employees earned over \$1,000 per year. The same fact holds true of one great Eastern steel plant. In the Telephone industry, manned almost wholly by skilled and semi-skilled persons, 23 per cent. of the employees are paid more than \$1,000 annually. What additional light on this problem can be gained by a perusal of State wage reports?

IV. THE MATERIAL FROM STATE LABOR REPORTS

The reports of the State bureaus of labor furnish some data which assists materially in determining the distribution of wage earners in the varying industrial States. The only State reports which are of real value in such a determination are those which publish classified earnings,—Massachusetts, New Jersey, Kansas and Wisconsin. The wage material for these States is compiled on the basis of classified weekly earnings for men, women and children. The purpose of this chapter will be adequately served by a discussion of the wages of males and females. A summary of the classified wages of males appears in the following table.

THE DISTRIBUTION OF WAGES

PERCENTAGES OF CLASSIFIED WEEKLY EARNINGS—MALES, IN ALL INDUSTRIES—BY STATES

Classified Weekly	Percentage of Total Adult Males			Percentage of Total Males Wisconsin 1906-7 ⁴
	(21 years and over) Massachusetts 1908 ¹	(16 years and over) New Jersey 1909 ²	Kansas 1909 ³	
Under \$5.....	1	4	2	3
\$5, but under \$6.....	1	3	1	1
6, " " 7.....	3	5	2	3
6, " " 8.....	7	6	3	5
8, " " 9.....	9	8	4	4
9, " " 10.....	14	15	14	20
10, " " 12.....	17	16	20	23
12, " " 15.....	20	17	24	30
15, " " 20.....	20	17	21	9
20 and over.....	8	9	9	2
	100	100	100	100
Total employed..	350,118	204,782	50,720	128,334

Up to this point, nothing has been said about the Wisconsin wage statistics, hence a word of explanation is in order. Wisconsin publishes wage data minutely classified by daily wages, covering adults, males and females, grouped by industries. Unlike most of the State reports, the Wisconsin figures relate, not only to wage earners, but to all employees, hence they are not exactly comparable with the data from the other States. Further-

¹ Statistics of Manufacture, 1908. Boston, 1909. P. 82.

² Bureau of Statistics, 1909. Camden, 1910. P. 120.

³ Annual Report, Bureau of Labor, 1909. Topeka, 1910. P. 10.

⁴ Bureau of Labor Statistics, Wisconsin, 1907-8. Madison, 1909. P. 464.

WAGES IN THE UNITED STATES

more, the latest available Wisconsin figures (June 1, 1911) are those for 1906-7. As these figures relate to the period before the last industrial depression, while the other group of statistics refer to the period since the panic, they are not strictly parallel. They are inserted here, only because of the desire to present all available data, and not because of the inherent value of the statistics. The industries of Wisconsin are similar to those of Kansas, since one in seven of the employees are women. While not warranting a detailed analysis, the Wisconsin figures may be included in a general comparison.

The most noticeable element in the table just presented is the marked uniformity which prevails between the wages of adult males in States as widely separated as Massachusetts, New Jersey and Kansas. With the exception of the different minimum (21 years in Massachusetts and 16 years in the other two States), the figures are absolutely comparable. When this slight Massachusetts variation is considered, it would appear that the wages in Kansas are somewhat higher than the wages in the other two States. This is doubtless due to the variation in the character of the industries in the Eastern and in the Middle

THE DISTRIBUTION OF WAGES

Western States. The textile industries (Cotton in Massachusetts and Silk in New Jersey) claim a large portion of the working population, while the textile industries are a negligible factor in Kansas. The conclusions from the data published by these four States furnishing the most reliable wage statistics are obvious. Approximately one-third of the adult male wage earners receive less than \$500 annually; two-thirds receive less than \$750 a year; nine-tenths earn less than \$1,000 annually, and eight or nine per cent. earn wages of more than \$1,000. Thus the wages from the State reports correspond almost exactly with the South Bethlehem and railroad wages; for all three cases there are just under one-tenth of the male wage earners receiving more than \$1,000 annually.

Turning, for a moment, to the females, a very similar grouping is presented. The percentages of females in the various States receiving classified weekly wages are shown on the following page.

Taking into consideration the fact that in Massachusetts the age of adults is "21 years and over" instead of "16 years and over," as in the other States, while in Wisconsin all females, children as well as adults, are included, the figures

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PERCENTAGES OF CLASSIFIED WEEKLY EARNINGS OF FEMALES IN ALL INDUSTRIES—BY STATES

Classified Weekly Earnings	Percentage of Total Adult Females			Percentage of Total Females Wisconsin 1906-7 ¹
	(21 years and over)	(16 years and over)		
	Massachusetts 1908 ¹	New Jersey 1909 ¹	Kansas 1909 ¹	
Under \$5.....	8	22	25	38
\$5, but under \$6.....	10	19	17	13
6, " " 7.....	16	19	19	23
7, " " 8.....	17	13	12	11
8, " " 9.....	15	9	9	3
9, " " 10.....	13	7	6	6
10, " " 12.....	13	6	8	3
12, " " 15.....	6	4	2	3
15, " " 20.....	2	1	2	*
20 and over.....	*	*	*	*
	—	—	—	—
	100	100	100	100
Total employed..	144,935	68,360	3,599	21,937

* Less than 1 per cent.

are remarkably uniform. In all cases, less than one per cent. of the females receive a wage over \$20 per week; from one-half to four-fifths receive less than \$8 per week; while the percentages at the various other wage levels vary no more than might be expected when the various methods of statistical compilation are considered.

New Jersey and Kansas, the only two States which, owing to similar statistical methods, are absolutely comparable, show almost exactly the same percentages of wage earners at the various

¹ References same as for table on page 185.

THE DISTRIBUTION OF WAGES

wage groups. This table therefore justifies the conclusion that the percentage of females receiving specified wages varies no more from State to State than the percentage of males.

V. THE DISTRIBUTION OF WAGES IN AMERICAN INDUSTRY

In this chapter is set down, as fully as may be, an answer to the numerous queries concerning the number of American wage earners who could be classed in the different wage groups. The evidence from the railroads, and the Steel industry dealt primarily with adult males, hence in making the comparisons, adult males have been considered primarily throughout.

The first group of statistics, compiled by the Interstate Commerce Commission, showed that of the million and a half railroad employees of the United States one-half received an average wage under \$600, while less than one-tenth showed an average wage over \$1,000. The statistics in the second group, taken on the one hand from a comparatively skilled industry, showed 21 per cent. of the employees under \$600; 55.6 per cent. from \$600 to \$960; and 24.3 per cent. over \$960; while the special report on the steel works at

WAGES IN THE UNITED STATES

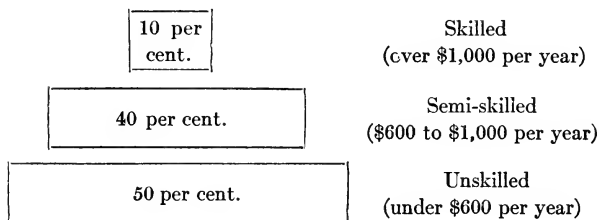
South Bethlehem discovered 45.9 per cent. of the employees under 16 cents per hour (about \$575 per year); 72 per cent. under 22 cents per hour (about \$750 per year); leaving 8.2 per cent. receiving wages of over \$1,000 per year. The reports from four State labor bureaus which publish classified earnings, show that approximately 50 per cent. of the adult male wage earners receive wages of less than \$12 per week (\$600 per year); three-quarters receive wages of less than \$15 per week (\$750 per year); while more than nine-tenths receive less than \$20 per week (\$1,000 per year). The most marked uniformity therefore prevails among the various sources of material dealing with the distribution of wage earners throughout industry. From the available material, it appears that roughly, one-tenth of the industrial wage earners are paid more than \$1,000 annually; that three-quarters receive less than \$750, while a half receive less than \$600 per year.

These facts may be expressed as shown in the diagram on the opposite page.

The data regarding the wage distribution of females leads to the conclusion that practically no adult females receive more than \$1,000 per year; that about 2 per cent. receive from \$750 to

THE DISTRIBUTION OF WAGES

AMERICAN INDUSTRIAL WAGE WORKERS (ADULT MALES)



\$1,000; that one-quarter receive from \$400 to \$750; while three-quarters are paid less than \$400, and three-fifths receive less than \$350 per year.

Here, in brief compass, is an effective answer to the oft repeated cry of “plenty of room at the top.” The wage workers are distributed over the wage groups in a pyramid,—large at the base and tapering toward the apex. Half of them work for less than \$600, and only one-tenth receive more than a thousand dollars annually.

CHAPTER X

WAGES IN THE UNITED STATES (1908-1910)

I. UNEMPLOYMENT AS A MODIFYING FACTOR

There is a real demand for facts regarding wages in the United States,—a demand based on the necessity of discussing the Standard of Living, the Cost of Living and other like problems from a fact basis. The material for a study of wage facts is, however, meagre. There are a few States which publish classified wage statistics; four special wage investigations have been made in recent years; and in addition to these reliable sources of information, several State and Federal reports print statistics of average wages. With the exception of this limited source of material, there are no data on current wages in the United States, consequently, while conclusions may justly be drawn from the localities which publish the data, the statements of wages in the United States at large must be based on inferences alone.

The value of these inferences is, however,

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greatly strengthened by the remarkable uniformity in the conclusions which may be based on an analysis of the various wage reports. The present chapter will state, in brief form, the nature of the inferences for the industrial section of the United States, which may be based on the material already cited in the preceding chapters.

In the consideration of wage statistics, there is one element which must be constantly borne in mind,—that is the extent of unemployment. Even in the States which furnish statistics of the number of days worked by a given industry, the unemployment problem is not adequately considered, because the personal incapacity of the employee is completely ignored.

That unemployment is a problem of serious magnitude is clearly indicated by Dr. Devine, who states, after an analysis of the causes of destitution in five thousand New York families, that unemployment affected 4,424 individuals in 69.16 per cent. of the five thousand families, while, of the twenty-five separate disabilities which led to destitution, unemployment occupies the leading place.¹ Unemployment (involuntary

¹ Misery and Its Causes . Dr. Edward T. Devine. N. Y., The Macmillan Co., 1909. P. 204.

WAGES IN THE UNITED STATES

idleness during normal work time) is a prime element in creating poverty, because it is a most potent factor in lowering annual earnings.

While it is impossible to state the exact extent of unemployment in the United States, a fairly accurate estimate may be based on the available unemployment data. Any analysis of the extent of unemployment should, however, be preceded by a brief statement of the causes underlying the phenomenon.

The causes of unemployment are divisible into two groups,—(1) Personal causes, and (2) industrial causes. The personal causes,—

- a Malnutrition
- b Sickness
- c Accident
- d Inefficiency

operate independent of industry, forcing idleness upon willing workers, through some incapacity of the workers themselves.

No statistics are available which give the extent of malnutrition in the United States. Many school children are known to be underfed, men and women are continually entering hospitals in an anæmic condition, yet the extent of

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this underfeeding, which so evidently prevails on every side, is most difficult to ascertain. Neither is there any method of deciding just how much unemployment is caused by sickness and accident. Sickness and accident certainly exist and their existence must, without doubt, cause unemployment, yet the exact extent of the two phenomena is unknown. In his "National Vitality," Irving Fisher estimates that in the United States there are probably at all times 3,000,000 seriously ill.¹ These statistics, which refer to serious illness, take no account of "minor ailments." Dr. Castle of Cincinnati, "from an experience of many years in the medical supervision of institution employees and general practice," estimates that there is an average of at least three days' time lost annually for each person in the population for such minor ailments. Dr. J. F. Morse of the Battle Creek Sanitarium, who has had a wide medical experience, estimates that the "well man" loses on an average five days a year from work, on account of headaches, toothaches, "colds," and similar minor ailments.² Turning for a moment

¹National Vitality. Irving Fisher. Government Print, Washington, 1909. P. 34.

²Supra, 39.

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to "accidents," it has been conservatively estimated that 500,000 persons are killed and injured each year in American industry.¹ This computation is of course independent of accidents due to fires, falls and the other individual mishaps that are of such everyday occurrence. Both sickness and accident are therefore of frequent occurrence, although the exact frequency of neither can be determined.

That inefficiency is a cause of unemployment is indicated by the following summary of returns from the operation of the British Unemployed Workingman's Act. Of a group of unemployed men, coming before one of the London Distress Committees, 86 per cent. were unskilled, 56 per cent. were casual laborers, 37 per cent. owed their position to age, inefficiency or bad character; 41 per cent. were of indifferent efficiency.²

So much can be said of the personal causes of unemployment. The everyday experience of each man or woman confirms their presence, though it throws no light on their total extent. All of these causes operate upon the individual, irrespective of

¹ Social Adjustment. Scott Nearing. New York, The Macmillan Co., 1911. Page 233.

² Work and Wages. Sydney J. Chapman. New York, Longmans Green & Co., 1908. P. 304.

WAGES IN THE UNITED STATES

his industrial position, hence they are necessarily ignored by any statistics which are based on the number of days annually worked by any industry.

Quite a different problem confronts the student in the second group of unemployment causes. Those unemployed because of personal incapacity, are not earning wages because they are personally unable to do so. On the other hand, there are strong, robust men and women, seeking work and unable to secure it,—disemployed. The chief industrial causes of unemployment are,—

1. Seasonal trades
2. Industrial crises
3. Labor troubles
4. Lack of stock or transportation facilities
5. Casual trades

Seasonal trades, which are common, necessarily involve unemployment. Outside construction work, glass manufacturing and coal mining are typical of the trades in which unemployment is several times greater at one season of the year than it is at another. Unemployment is generally less frequent in summer than in winter (coal mining and clothing industries excepted). In

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ordinarily prosperous years, some trades (building, teaming) show winter unemployment of more than 30 per cent.

The effects of crises and labor troubles in unemployment are apparent. The English figures, excellently presented by Chapman¹ and Beveridge,² are paralleled in the United States by the figures of unemployment procurable from the coal mine reports³ and the reports of the New York Bureau of Labor statistics.⁴ The coal mine figures are more extensive and show that a coal miner may expect unemployment equivalent to one-fourth or one-third of his entire working time. In years of depression, his unemployment may increase to one-half his working time.⁵ The New York figures show a steady decrease in unemployment from 1897 to 1906, from which year there was a constant increase until March, 1908, when the unemployment for all trades was 35.7 per cent.

¹ *Supra*, p. 316.

² Unemployment. W. H. Beveridge. New York, Longmans Green & Co., 1909. Ch. IV.

³ The Production of Coal in the U. S. Edward W. Parker. Washington, Government Print, 1908.

⁴ Bulletin 41, New York Dept. of Labor, p. 114.

⁵ Unemployment in the U. S. Scott Nearing. Quarterly Publications, Am. Stat. Assn., Sept., 1909, pp. 530-5.

WAGES IN THE UNITED STATES

For the unionized trades of New York State, for the coal industry of the United States, and by inference for the other industries of the United States, we may draw these conclusions,—

- A Unemployment is always a factor in modern industry.
- B The average miner can work, from year to year, about two-thirds of the time.
- C In other industries, the average unemployment from year to year is almost one-fifth.
- D In some years the unemployment is several times more severe than in others.¹

Strikes and miscalculation in the supply of stock or transportation facilities are constantly recurring factors in every industry. Unemployment due to these causes is not extensive. A serious cause of unemployment exists, however, in the “casual trades,” which never employ men regularly. The casual laborers are recruited from the unskilled, inefficient, aged and defective group, who are unable to keep a permanent position.²

¹ *Supra*, p. 539.

² Unemployment. W. H. Beveridge. New York, Longmans Green & Co., 1909. Ch. V.

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As casual labor presupposes inefficiency, the casual laborer becomes less and less able to keep his place in the industrial world. Casual labor unquestionably exists in the United States, but just how extensively cannot be decided. One thing is clear,—casual labor is inefficient, cheap, and disastrous to the casual laborer.

So, “the various elements in the problem lead ultimately to a degree of unemployment, varying with the year, the season of the year, and sometimes, in the case of casual labor, with the day of the week. In each case workers are without the work upon which they are dependent for a livelihood.”¹

Here, then, is a problem of fundamental concern, which no wage study can overlook, since the mere statement of wage statistics is not necessarily a statement of wages. In fact, unless the unemployment due to both personal and industrial causes has been taken into account, the statistics are far from accurate. In view of these considerations, it is interesting to inquire what value may be attached to the various forms of wage statement.

¹ Social Adjustment. Scott Nearing. New York, The Macmillan Co., 1911. P. 276.

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In a simple statement of wages per day, unemployment is not considered at all, since any employee may be sick or out of work for a particular day. In these wage statistics which furnish classified weekly earnings, together with the number of days per year worked in a given industry, the industrial causes of unemployment are alone considered. These statistics, while far from satisfactory, are much more accurate than those which give data for daily or weekly wages only. A third group of wage statistics, secured by dividing the total annual earnings in an industry by the average number of employees, while most unsatisfactory in some respects, represents actual wages, with unemployment, from all sources, deducted. These average wages are of course wholly inadequate, as was indicated in the chapter on "The Statistics of Average Wages," nevertheless they are the only wage statistics which give due weight to all forms of unemployment.

The statistics cited in the study must therefore be weighed with the problem of unemployment in mind. As unemployment varies with the year and the industry, so wages for different years and different industries are modified in varying proportion by the unemployment factor. Certainly

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none of the wage statistics cited are lower than the wages actually paid each year. If any revision of these wages statistics is to be made, and some revision is obviously necessary, it will be a revision downward.

II. WAGE VARIATION WITH INDUSTRY, SEX, AGE AND GEOGRAPHIC LOCATION

Any consideration of wages must therefore take unemployment into serious account, since without it no statement of wages paid, based on daily or weekly wages, can be accurate. In answering the question, "What are wages?" there are four other factors which, to a greater or less degree, influence the reply. Wages vary with the industry, the sex, the age, and the geographic location; hence no statement of wages can be made without considering all of these items.

The wage variation from industry to industry is extreme, even within the same State. A comparison of various States, does not, however, show any greater variations, as will be seen from a study of the wages of adult males in the leading industries of the three States publishing classified weekly earnings,—

WAGES IN THE UNITED STATES

CUMULATIVE PERCENTAGES OF ADULT MALES IN THE LEADING INDUSTRIES, RECEIVING CERTAIN CLASSIFIED WEEKLY WAGES
1908-9

Massachusetts—1908 ¹

Classified Weekly Wages	Cotton Goods	Boots and Shoes	Foundry	Worsted Goods
Under \$8.....	31	11	6	21
“ 12.....	77	37	46	64
“ 15.....	91	58	68	83
“ 20.....	97	84	94	97
\$20 and over.....	3	16	6	3

New Jersey—1909 ²

Classified Weekly Wages	Silk (Broad and Ribbon)	Machinery	Woollen and Worsted	Oils
Under \$8.....	21	15	38	3
“ 12.....	52	43	70	53
“ 15.....	74	68	83	66
“ 20.....	95	92	93	94
\$20 and over.....	5	8	7	6

Kansas—1909 ³

Classified Weekly Wages	Cars and Shops	Coal Mining	Slaughtering and Meat Packing	Binding & Printing
Under \$8.....	7	8	7	20
“ 12.....	51	26	64	40
“ 15.....	74	46	84	55
“ 20.....	92	78	96	80
\$20 and over.....	8	22	4	20

Thus, a wide variation appears between the wages paid to adult males in the leading industries of the same State and of different States. In the textile industries the wages are universally low, while in other industries, such as Oils and Machinery, wages are considerably higher than they are

¹ Chapter III.

² Chapter IV.

³ Chapter V.

WAGES IN THE UNITED STATES

in the textile industry. In the entire group of statistics, the proportion of employees receiving any group of wages,—for instance more than \$20 per week, varies from 3 to 22 per cent. It would, under these circumstances, be impossible to state what wages were being paid in any one State, without modifying the statement by a reference to the wide difference between the various industries in that State.

An equally great discrepancy appears between the wages of males in the Bell telephone system, 24.3 per cent. of whom are paid more than \$960 per year,¹ and the wages of males in the South Bethlehem steel works, 8.2 per cent. of whom receive more than \$1,000 annually.¹ So, too, in the case of women in Illinois industry, the wages in the department stores are very much higher than the wages in the factories.¹

A considerable difference exists between the wages of males and of females, in different industries and in the same industry. There is no one industry in any of the States publishing classified weekly earnings in which the wages of women are higher, on the average, than the wages of men, while there are several industries in which the

¹ Chapter VI.

WAGES IN THE UNITED STATES

wages of men are nearly twice as great, on the average, as the wages of women.

Age also plays a large part in determining wages. In industries like Cotton Spinning, Silk Throwing, Box Making and Confectionery Manufacture, in which large numbers of children and young persons are employed, average earnings are very low, while in other industries, such as Foundry and Machine Shop, Coal Mining, Oils, and Machinery, where children cannot be extensively employed, wages range much higher.

Geographic location probably has something to do with wages. Of the States recently publishing classified weekly wages, Massachusetts, New Jersey and Kansas, the last named State shows the highest wages. This variation may be due to the varying characters of the industries in Kansas, or it may be due to the higher standard of wages maintained in the West. In the Telephone industry, there is a decided variation in the wages of telephone "operators"; from the South Central group of States where wages are much lower, to the Western States, where wages are considerably higher than they are in the three Eastern groups of States. So, too, in this industry, the wages of "operators" was much higher in the larger than

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in the smaller cities. The statistics of railroad wages tend to confirm this statement regarding wage variation from one geographic area to another, since, in the South Central they were lower, and in the Western States slightly higher than in the remainder of the country. There was one exception to this statement, however. The conductors and enginemen show lower wages in New England than anywhere else, while the wages of other employees were only slightly higher in the West than in the East and South.

The variation of wages from city to city and from large to small cities is neither great nor regular. For similar industries in Ohio,¹ Kansas,¹ and Massachusetts,¹ the range of wages does not follow the size of the cities at all,—lower wages being paid in some large than in some small towns, reporting the same industry. Geographic location is therefore a factor that deserves at least a measure of consideration.

Bearing in mind these factors—unemployment, and wage variation with industry, sex, age and geographic location—we may now seek to answer, as accurately as may be, the question, “What are wages?”

¹ Chapter VIII.

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III. WAGES IN THE UNITED STATES—AVERAGE AND ACTUAL

Both average and classified wage statistics must be considered in answering the question, "What are wages?" Average wages have their disadvantages—they do not accurately represent the earnings of any one group of individuals. On the other hand they are more accurate in that, when they are secured by dividing total earnings for a year by the average number of employees, they make all allowances for the problem of unemployment.

The most reliable average wage data is really furnished by States (Massachusetts and New Jersey) which publish the best statistics of classified earnings. There are, however, four additional States, Michigan, Rhode Island, New Hampshire and Pennsylvania, which publish average wage data of some merit. A comparison of the average wage statistics published by these six States forms the best available basis for statements regarding average wages.

There is little variation in average wages from State to State or from industry to industry, when the varying methods of compiling the State data are taken into account. Average wages range, in

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the leading industries, from \$450 to \$600 per year,—seldom rising above the latter figure except in industries like Petroleum and Malt Liquors, for which considerable skill is a prerequisite to employment, and in which males only are employed. There is a wide variation between the average wages in these industries and in industries like Confectionery and Paper Box Manufacturing, which employ a majority of women, and in which the average annual earnings fall below \$400.

In view of all of the evidence, it is fair to say that the adult male wage workers in the industries of that section of the United States lying east of the Rockies and north of the Mason and Dixon Line receive a total average annual wage of about \$600; that this falls to \$500 in some of the industries employing the largest numbers of persons, but rises to \$700 or even to \$750 in a few highly skilled industries. That the average annual earnings of adult females in the same area is about \$350, with a very slight range, in the industries employing large numbers of adult females.

Statistics of classified wages are published in:—

1. A few State reports.
2. The Telephone Investigation.

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3. The Bethlehem Steel Works Investigation.
4. The reports of the Interstate Commerce Commission in Railroad Statistics.

From these four sources some information may be derived regarding the wages paid to both males and females. First, therefore, as to the wages of males. The table containing a brief summary of the available data on the wages of adult males, is secured from the sources indicated. In order to simplify the table, only five wage groups have been retained, while the cumulative percentages only are considered in each case. (See next page.)

With one exception (Bell Telephone Company) these statistics are remarkably uniform. About one-half of the adult males included receive less than \$12 per week (\$600 per year); while less than one-tenth receive wages of more than \$1,000 per year. The Bell Telephone Company, a relatively high-class industry, enjoying almost no unskilled help, reports 20 per cent. of its employees as receiving more than \$1,000. With this one exception, all of the reports are in practical agreement. Did these statistics emanate from one source, or were they based on one investigation, or derived through one statistical method, they

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CUMULATIVE PERCENTAGES OF MALES RECEIVING CERTAIN CLASSIFIED WEEKLY EARNINGS—COMPILED FROM CERTAIN REPORTS—1908-1910

Classified Weekly Earnings	Massachusetts ¹ 1908 (21 years and over) Per cent.	New Jersey ² 1909 (16 years and over) Per cent.	Kansas ³ 1909 (16 years and over) Per cent.	Wisconsin ⁴ 1906-7 (All males) Per cent.
Under \$8.....	12	18	8	12
“ 12.....	52	57	46	59
“ 15.....	72	74	70	89
“ 20.....	92	91	91	98
\$20 and over.....	8	9	9	2
Total employed	350,118	204,782	50,720	128,334

Classified Weekly Earnings	Bell Telephone Company ⁵ 1910 (All males) Per cent.	Bethlehem Steel Works ⁶ 1910 (All males) Per cent.	Railroads of the United States ⁷ 1909 (All males) Per cent.
Under \$8.....	5	8	22
“ 12.....	23	60	51
“ 15.....	32	75	78
“ 20.....	80	92	92
\$20 and over.....	20	8	8
Total employed.	171,139	9,184	1,502,823

¹ Statistics of Manufacture, 1908. Boston, 1909. P. 82.

² Bureau of Statistics, 1909. Camden, 1910. P. 120.

³ Annual Report, Bureau of Labor, 1909. Topeka, 1910. P. 10.

⁴ Bureau of Labor Statistics, Wisconsin, 1907-8. Madison, 1909. P. 464.

⁵ Investigation of Telephone Companies. C. P. Neill. Washington, 1910. P. 85-7.

⁶ Report on Strike at Bethlehem Steel Works. C. P. Neill. Washington, 1910. P. 60.

⁷ Annual Report, Statistics of Railways, 1908-9. Pp. 34 and 40.

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might possibly be open to question; but coming as they do from six separate authorities, from States as far separated as Massachusetts and Wisconsin, from the Interstate Commerce Commission, and from the inspection by the Department of Commerce and Labor of the pay-rolls of the telephone and Bethlehem companies, their agreement permits of but one conclusion,—that these seven reports give an accurate measure of the wages of adult males in the industries of the United States.

Turning now, to the wages of females, the data, while less complete, is nevertheless excellent. (See next page.)

There is again a remarkable uniformity in the distribution of women's wages in these seven reports. Three-fifths of the women receive less than \$8 per week (\$400 per year), while a vanishing percentage of them is paid more than \$15 per week (\$750 per year). Nearly nine-tenths of the women employed in these various States and trades are paid less than \$12 per week (\$600 per year).

Here, then, is a clearly drawn picture,—an answer to the question, "What are wages?" The average wage statistics showed that the average

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CUMULATIVE PERCENTAGES OF FEMALES RECEIVING CERTAIN CLASSIFIED WEEKLY EARNINGS—COMPILED FROM REPORTS—1908-1910

	Massachusetts ¹ 1908	New Jersey ² 1909	Kansas ³ 1909	Wisconsin ⁴ 1906-7
Classified Weekly Earnings	(21 years and over) Per cent.	(16 years and over) Per cent.	(16 years and over) Per cent.	(All females) Per cent.
Under \$5.....	7	22	25	38
" 8.....	50	60	73	85
" 12.....	79	89	88	94
" 15.....	92	95	96	97
\$15 and over.....	8	5	4	3
Total employed	144,935	68,360	3,599	21,937

	Bell Telephone Company ⁵	Illinois Department Stores ⁶ 1908	Illinois Factories ⁶ 1906
Classified Weekly Earnings	(All females) Per cent.	(All females) Per cent.	(All females) Per cent.
Under \$5.....	6	5	15
" 8.....	59	32	60
" 12.....	95	66	94
" 15.....	99	81	99
\$15 and over.....	1	19	1
Total employed	20,621	2,556	2,258

¹ Statistics of Manufacture, 1908. Boston, 1909. P. 82.

² Bureau of Statistics. Camden, 1910. P. 120.

³ Annual Report, Bureau of Labor, 1909. Topeka, 1910. P. 10.

⁴ Bureau of Labor Statistics, Wisconsin, 1907-8. Madison, 1909. P. 464.

⁵ Investigation of Telephone Companies. C. P. Neill. Washington, 1910. P. 294-5.

⁶ Report, Bureau of Labor Statistics, 1908. Springfield, 1910. P. 435.

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wages of adult males were in the neighborhood of \$600. On the other hand, a study of classified wage statistics shows that half of the adult males working in the industrial sections of the United States receive less than \$600 per year; three-quarters are paid less than \$750 annually; and less than one-tenth earn \$1,000 a year. Half of the women fall below \$400 a year; while nearly nine-tenths receive less than \$750. These figures are not accurate, however, since they are all gross figures,—including unemployment. They should be reduced by, perhaps, 20 per cent.,¹ varying with the year, the location and the industry. There may be no general agreement as to what reduction should be made,—but some reduction is obviously necessary. Making, therefore, a reduction of one-fifth, it appears that half of the adult males of the United States are earning less than \$500 a year; that three-quarters of them are earning less than \$600 annually; that nine-tenths are receiving less than \$800 a year; while less than ten per cent. receive more than that figure. A corresponding computation of the wages of women shows that a fifth earn less than

¹Unemployment in the United States. Scott Nearing. Quarterly Publications Am. Stat. Assn., Sept., 1909. P. 539.

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\$200 annually; that three-fifths are receiving less than \$325; that nine-tenths are earning less than \$500 a year; while only one-twentieth are paid more than \$600 a year.

Here, then, in brief, is an answer to that vital question,—“What are wages?” For the available sources of statistics, and by inference for neighboring localities, the annual earnings (unemployment of 20 per cent. deducted) of adult males and females employed east of the Rockies and north of the Mason and Dixon Line, are distributed over the wage scale thus:—

Annual Earnings	Adult Males	Adult Females
Under \$200.....	....	1-5
“ 325.....	1-10	3-5
“ 500.....	1-2	9-10
“ 600.....	3-4	19-20
“ 800.....	9-10	....

Three-quarters of the adult males and nineteen-twentieths of the adult females actually earn less than \$600 a year.

It is not important that the reported wages be reduced by one-fifth. The available unemployment data indicates that such a reduction is an approximately correct one, if, however, later studies show this estimate of unemployment to be excessive

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or inadequate, a corresponding alteration will be made on the summary of wages, but until such a study appears, the answer to the question, "What are wages?" is contained in the above summary.

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